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Birds

A practical handbook of
British birds /

Harry Forbes Gutterby



Genus *PODICEPS* Lath.

PODICEPS Latham, Gen. Synops. Suppl. 1, p. 294 (1787—Type by subsequent designation, of Gray, 1840, *P. cristatus*).

Culmen very little curved downwards, or straight and even very slightly upwards. Tarsus shorter than middle claw with toe. Feathers on fore-head normal. Secondaries little shorter than primaries or equal. Eggs unspotted with chalky covering. Nest floating mass of water-plants and mud. About 15 species, of which 5 British.

Key to species of genus PODICEPS.

- | | | | |
|---|---|---|---|
| 1 | { | With elongated feathers on crown or sides of head or with rufous on neck 2 | |
| | | Without elongated feathers on head, neck white or grey 3 | |
| 2 | { | Throat and lower part of fore-neck white | <i>P. cristatus</i> , ad. summer, p. 449 |
| | | Throat grey, fore-neck rufous | <i>P. griseigena</i> , ad. summer, p. 456 |
| | | Throat and neck black | <i>P. auritus</i> , ad. summer, p. 453 |
| | | Throat black, jugulum rufous | <i>P. nigricollis</i> , ad. summer, p. 459 |
| | | Throat and fore-neck rufous, chin and crop blackish | <i>P. ruficollis</i> , ad. summer, p. 462 |
| 3 | { | Wing under 110 mm. | <i>P. ruficollis</i> , winter & juv., p. 463 |
| | | Wing over 100 but under 155 | 4 |
| | | Wing over 155 | 5 |
| 4 | { | Inner primaries white, culmen straight or slightly turned upwards | <i>P. nigricollis</i> , winter & juv., p. 460 |
| | | Inner primaries mostly or quite brown, culmen slightly curved downwards | <i>P. auritus</i> , winter & juv., p. 454 |
| 5 | { | Bill 45–55 mm., small coverts along humerus white, whitish spot on lores | <i>P. cristatus</i> , winter & juv., p. 450 |
| | | Bill 35–45, small coverts along humerus brown, lores brown without white spot | <i>P. griseigena</i> , winter & juv., p. 457 |

*PODICEPS CRISTATUS*351. *Podiceps cristatus cristatus* (L.)—THE GREAT CRESTED GREBE.

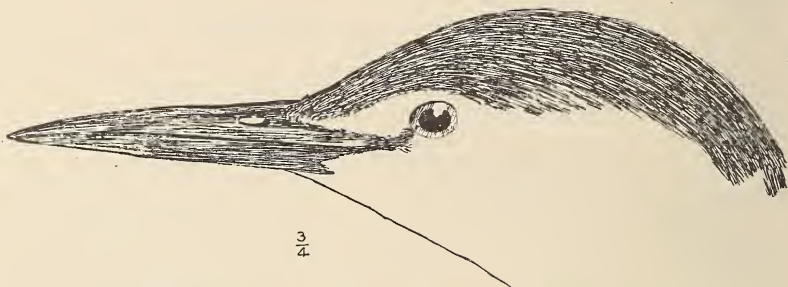
COLYMBUS CRISTATUS Linnæus, Syst. Nat., ed. x, i, p. 135 (1758—Europe. Restricted typical locality: Sweden).

Podiceps rostratus Mansell-Pleydell, Orn. & Conch. Dorset, p. 47 (1874, Dorset—Ex Yarrell MS).

Podiceps cristatus (Linnæus), Yarrell, iv, p. 117; *Podicipes cristatus* (Linnæus), Saunders, p. 717.

DESCRIPTION.—*Adult male and female. Summer.*—Fore-head, crown, upper-part of neck, two tufts of elongated feathers on each side of crown and lower feathers of “tippet” of elongated feathers all round base of skull and upper-throat black, basal part of feathers of nape and of outer feathers of tufts and upper ones of “tippet” chestnut as the feathers adjoining on ear-coverts and throat (elongated feathers of tufts on sides of head and “tippet” of loose structure, those of tufts when full grown ♂ 40–45, ♀ 30–40 mm. long); chin, lores, cheeks, behind eyes and narrow line above eyes white (through centre of lores a line of naked skin, feathers on

upper-part of lores tinged buff); back of neck blackish-grey; rest of upper-parts darker, almost black, with a tinge of brown, some outer scapulars with more or less white on basal portions and outer webs and some with chestnut on outer webs; throat below tippet and under-parts silky-white; sides of neck with varying amount of rufous-buff tinge, flanks more rufous intermixed with brown-black, tips and often shafts of feathers being black or blackish; axillaries white, a few often with dusky tips; under wing-coverts white, a few feathers along edge of wing brown; tail black some



The Great Crested Grebe (*Podiceps c. cristatus*). First winter.

feathers partially white and chestnut; primaries grey-brown, paler on inner webs, bases white or whitish, inner feathers tipped white; secondaries white, outer ones usually marked brown on outer webs and sometimes with shafts blackish at bases, inner ones with brown patches on outer webs and occasionally with some rufous, innermost blackish as scapulars; greater and median coverts black-brown sometimes tipped rufous, outer greater usually with some white at base of inner webs; lesser coverts white. This plumage is acquired by a moult of all body- and tail-feathers and innermost secondaries and innermost greater coverts but not rest of wing Feb. to May, while even in June feathers of mantle are still growing though crest and tippet are complete. *Winter*.—A complete moult commences July or Aug., so that birds with some body-moult may be found in all summer months, and moult of body seems, as in summer, very gradual and extends to Dec. Moult of wings very rapid, all wing-feathers and wing-coverts being shed simultaneously Aug.—Oct. New plumage as summer but fore-head and crown not so black, more brownish, tufts of sides of crown much shorter, no definite "tippet," feathers of sides of head somewhat elongated and mostly white but a varying number blackish or rufous (pale chestnut) usually with white fringes and bases; upper lores whiter than in summer; flank-feathers dark brown with very little pale rufous. N.B.—Very exceptionally there is considerable amount of chestnut on upper-parts.

Nestling (Plate 7).—Head, neck, upper-parts and sides of body striped, head and neck black and white, upper-parts and sides of body brown-black and dull buffish-white. On lores and



(4-5THS NATURAL SIZE.)

NESTLINGS IN DOWN of: 1, The Storm-Petrel (*Hydrobates pelagicus*). 2, The Fulmar Petrel (*Fulmarus g. glacialis*). 3, The Wood-Pigeon (*Columba p. palumbus*). 4, The Great Crested Grebe (*Podiceps c. cristatus*). 5, The Black-necked Grebe (*P. n. nigricollis*). 6, The Little Grebe (*P. r. ruficollis*).

each side of fore-head above eyes a patch of bare skin and another roughly triangular patch on top of crown. Line of down in centre of fore-head white margined on each side with black dividing over eyes and passing down each side of crown, sides of crown with wide black stripes, centre of back of crown with patch of white, stripes down neck and upper-parts regular and even, black stripes down sides of neck and throat narrower and rather broken on chin and cheeks, that down centre of throat dividing on lower-throat making an inverted V, breast and rest of under-parts white. Bill with two transverse black bands across both mandibles. Down short and very close, but as feathers of juvenile plumage begin to grow they push it out and it adheres to tips of rami. Down thus becomes distributed and pattern is broken up. Down of upper-parts though still mostly concealing feathers, to tips of which it is adhering, then appears black-brown sprinkled with buffish-grey. Down of head and neck remains striped until bird is considerable size as feathers on these parts grow later and often as late as Nov. some down remains attached to these feathers.

Juvenile.—Fore-head and crown black-brown, feathers of fore-head tipped white, short tufts on sides of back of crown of slightly elongated feathers; lores and sides of head white with two somewhat broken stripes of black-brown, one from behind eye and another from base of upper mandible to upper-neck, shorter and more ill-defined streaks on sides of chin and some brown-tipped feathers down centre of chin; on sides of neck (in region of "tippet" of adult) usually some pale rufous and black; upper-parts as adult but browner not so black; under-parts silky-white; flanks brownish with rufous-buff tinge; wings much as adult.

First winter.—When juvenile body-feathers are entirely moulted becomes like adult winter except that tufts on crown are shorter and sides of head are white without any black or rufous "tippet" feathers or with some tinged buff or dusky. The juvenile body-plumage (not wings) sometimes begins to moult July but often as late as Dec. all juvenile feathers are not moulted especially on head, some white-tipped fore-head feathers remaining and some black or rufous feathers of streaks on sides of head, while some scapulars with down still on tips are frequently not yet moulted. *First summer*.—Moult as adult, but apparently often later, some birds being in first winter plumage even as late as April. There seems no definite way of distinguishing from adult but those birds with less developed "tippets" are apparently first summer.

Measurements and structure.—♂ wing 180–195 mm., tarsus 62–68, bill from feathers 47–55 (12 British measured). ♀ wing 175–187, bill 40–46. Primaries: 1st very small and hidden by coverts, 3rd longest, 2nd and 4th sometimes as long, often 3–5 mm. shorter, 5th 10–15 shorter, 6th 20–28 shorter; 3rd and 4th emarginated near tips on outer and 2nd and 3rd and sometimes 4th on inner webs. Tail a small tuft of very short, loosely constructed feathers. Bill straight, compressed and tapering to point, gonys

sloped upwards to tip. Nostrils oblong and narrow on each side of ridge of culmen near base. Narrow strip of bare skin between base of upper mandibles and eye. Most of tibia enveloped by skin and legs thus inserted very far back. Tarsus extremely compressed and flat, serrated at back; three toes long, flat, with broad, flat and lobed lateral membranes and connected at base with webs, hind toe elevated, very short, flat and lobed, claws flat and nail-like. Feathers of under-parts stiff but with widely separated rami except at tip, those under vent very loose and down-like.

Soft parts.—Bill (ad.) ridge of culmen dark horn-brown, tip pale bluish-livid, sides of basal parts of upper and base of under mandibles carmine, (juv.) same but base paler bluish-pink; legs and feet: outside of tarsus olive-green with dark markings, inside and toes greenish-yellow, edges of toes sepia, nails bluish; iris (ad.) crimson with narrow orange inner ring, (juv.) orange with inner ring pale yellow; bare strip on lores dusky-olive.

CHARACTERS AND ALLIED FORMS.—*P. c. infuscatus* (Africa) has black of crown extending lower behind eye, and no white line above eye, chestnut of "tippet" more yellowish, upper-parts and flanks blacker, winter and summer plumages apparently alike; *P. c. australis* (N. Zealand) has head like *P. c. cristatus* but no white line above eye, upper-parts and flanks black like *infuscatus*. Large size, pale bill, unspotted under-parts and in summer chestnut and black tippet distinguish this species from other British Grebes.

FIELD-CHARACTERS.—Like Divers, Grebes are essentially aquatic; expert swimmers and divers, obtaining most of their food under water. In alighting Grebes strike water with their breasts and do not thrust forward feet to retard their advance as do Ducks and Geese. This species distinguished by its superior size and slender build; in breeding-plumage by white fore-neck, dark chestnut tippet, black ear-tufts and pinkish bill; in winter plumage differs from Red-necked Grebe in having white streak above eye. In flight, when it appears mainly white, attenuated form, long neck with head below plane of body and legs outstretched behind give it grotesque appearance. Alarm-note "kek, kek." In spring utters a barking cry, "wark, wark," a loud croaking groan, "aughrr," and, during courtship display, a short repeated "t'ck." Hunger-cry of young an incessant querulous "pee-a, pee-a, pee-a."

BREEDING-HABITS.—Haunts broads, meres and reed-grown pools of fair size, and on large sheets of water several pairs may be met with, but occasionally has been found almost in colonies on the Continent. *Nest*.—In water, composed of dead reeds and other vegetable matter, such as pond-weeds, rushes, flags and occasionally sticks. Weeds are pulled over the eggs when incubating bird leaves. *Eggs*.—Usually 3 or 4, sometimes 5, but 6 to 9 have been occasionally recorded, chalky-white when fresh, but rapidly becoming stained by contact with wet and decaying weeds. Average of 100 British eggs, 54.8×36.7 . Max.: 62.7×37.8 and 46.5×39 .

Min. : 46.5×39 and 55.3×34 mm. *Breeding-season*.—Usually from May onwards, occasionally April to July and at times Aug. or Sept. *Incubation*.—By both sexes. Period about four weeks. Occasionally double brooded.

FOOD.—Mainly small fish of various kinds, but also insects, especially coleoptera (*Dytiscus*, *Donacia*, etc.) ; also *Naucoris cimicoides* ; mollusca (small freshwater species) ; and newts. Feathers are frequently found in stomach in considerable quantities and occasionally *Gammarus*, as well as remains of vegetable matter.

DISTRIBUTION.—*British Isles*.—Resident. During last thirty or forty years breeding-range has been extending. Now nests many suitable inland waters throughout England (more rarely extreme south-west and north) ; a few places Wales ; a good many places Scotland south of Grampians, especially in faunal areas of Clyde, Forth, and Tay, and many places in Ireland. To mainland Scotland, north of Grampians, as well as Orkneys, Shetlands, and I. Hebrides rare or uncommon visitor (not recorded breeding except in Moray 1913 and possibly 1912) and unrecorded O. Hebrides. In winter general movement to tidal waters and coasts.

DISTRIBUTION.—*Abroad*.—Nesting in Europe from lat. 60° north to Mediterranean and north Africa, and throughout northern and central Asia to China and Japan. Northern birds migratory, wintering in Mediterranean and northern India and Africa. Represented by allied races in Africa south of Sahara, Australia and New Zealand.

PODICEPS AURITUS

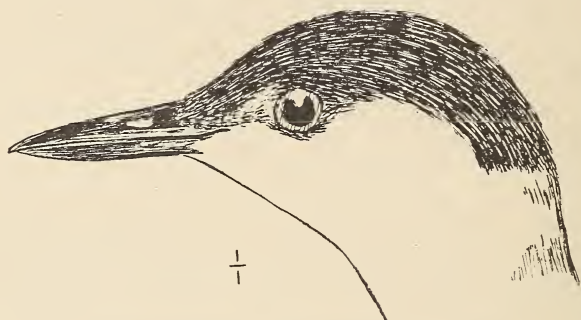
352. Podiceps auritus (L.)—THE SLAVONIAN GREBE.

COLYMBUS AURITUS Linnæus, Syst. Nat., ed. x, i, p. 135 (1758—Europe and America. Restricted typical locality: Sweden).

Podiceps auritus (Linnæus), Yarrell, iv, p. 128 ; *Podicipes auritus* (Linnæus), Saunders, p. 721.

DESCRIPTION.—*Adult male and female. Summer*.—Fore-head, crown and neck black glossed blue ; mantle and scapulars glossy black, feathers narrowly edged grey or greyish ; back brown-black ; rump and tail as mantle but lower tail-feathers white with black tips, sides of rump chestnut, feathers tipped black ; stripe from upper mandible above lores and eye through ear-coverts to nape chestnut, portion from behind eye more golden (feathers very narrow, long and of silky texture) ; sides of head, chin and upper-throat glossy blue-black (feathers of sides of throat long and wedge-shaped forming a tippet, considerably longer than in Black-necked Grebe, but those of crown normal and not elongated as in that species) ; rest of throat and sides of upper-breast chestnut, some feathers adjoining breast tipped white ; breast and belly silky-white ; sides of breast and flanks chestnut, feathers mostly tipped greyish-black and many adjoining breast and belly white with

subterminal blackish-grey spots or marks ; vent grey-brown, feathers down-like and tipped white ; axillaries and under wing-coverts white ; primaries brown with black shafts, pale brown inner webs and white bases, two innermost occasionally with small white tips ; secondaries white, outer ones with varying amount of brown, two outermost often mostly brown with small white tips, varying number of middle ones pure white, inner ones white with black tips and innermost black with white bases ; wing-coverts grey-brown, innermost white, tipped black-brown. This plumage is acquired by moult of body-feathers and tail but not of wing-feathers or wing-coverts commencing Feb., sometimes complete by April but



The Slavonian Grebe (*Podiceps auritus*). Winter.

summer feathers are often still growing as late as June and July. *Winter*.—A complete moult takes place Aug.–Nov. (None actually moulting wing-feathers available for examination.) Crown glossy black but not so blue-black as summer ; neck browner black, on each side of lower nape a white patch not quite meeting in centre of back of neck, feathers of which have long brown-black tips and white bases ; mantle and scapulars not so glossy as summer and greyish edges rather more obscure ; no chestnut on sides of rump, sides of breast or flanks, feathers being white, tipped black ; above lores a greyish spot ; some feathers behind eye often more or less rufous ; chin, cheeks up to eye, ear-coverts and upper-throat white often with a few ill-defined blackish spots ; lower-throat pale brown, feathers tipped white, occasionally whole throat white ; rest of plumage as summer.

Nestling.—Much like that of *P. c. cristatus* but chin and light stripes of head tinged buff, light stripes of neck and upper-parts narrower and greyish-white not buffish, general appearance of upper-parts thus blacker than in *P. c. cristatus* but stripes though narrow, clear and not obscured as in *P. griseigena* and *P. nigricollis*, upper mandible with two transverse black bands, proximal one not reaching cutting edge and neither on under mandible.

Juvenile.—Much like adult winter but upper-parts browner,

sides of nape and sometimes cheeks slightly mottled brown, flanks more lightly marked brownish-black.

First winter.—Like adult but probably never with rufous markings on feathers behind eyes. The juvenile body-feathers and tail but not wing-feathers or wing-coverts are moulted Sept.–Dec. and sometimes not complete until Feb. *First summer*.—Birds with brownish crown, chin and cheeks and with short feathers in region of tippet and ill-developed ear-tufts are probably first summer.

Measurements and structure.—♂ wing 134–150 mm., tarsus 44–49, bill from feathers 22–27 (15 measured). ♀ wing 129–145, bill 20–25. Primaries: 1st very small and hidden, 3rd longest, 2nd as long or 1–2 mm. shorter, 4th 2–5 shorter, 5th 11–15 shorter, 6th 17–23 shorter; 2nd to 4th emarginated near tips on outer and inner webs. Bill rather stout, straight, upper mandible at tip curving gently downwards and gonys sharply sloped up. Rest of structure as in Great Crested Grebe.

Soft parts.—Bill blue-grey, tip whitish, base darker tinged flesh; legs and feet blue to greenish-grey, toes edged yellowish, outside of tarsus and underside of toes brown-black; iris rose-pink to orange-pink with silvery inner ring round pupil.

CHARACTERS.—No subspecies. Distinguished from Black-necked Grebe by straight and stouter bill, no white or scarcely any on inner primaries, in summer by chestnut fore-neck, in winter and juvenile by more white on sides of head, white extending to eye and on ear-coverts. Considerably larger than Little Grebe and smaller than Great Crested and Red-necked.

FIELD-CHARACTERS.—In breeding plumage distinguished by *chestnut* neck, black head and tippet, with tuft of yellow feathers projecting like horns from eyes beyond back of head. In winter dark colour of crown does not extend below eye; pure white of cheeks and throat nearly meet on nape, suggesting a white ring round neck, whereas Black-necked Grebe usually has continuous broad dark line down hind-neck, but critical distinction is stout, straight bill, which in Black-neck is slender and tip-tilted.

BREEDING-HABITS.—Haunts edges of lochs, and several pairs may be found nesting not far apart. *Nest*.—Similar to those of other Grebes: a mass of water-weeds and decaying vegetable matter in shallow water with a depression in middle; wet weeds pulled over eggs on leaving. *Eggs*.—4, less commonly 3, 5 or even 6 and 7, white when fresh with soft chalky surface, but rapidly becoming stained by contact with nest. Average of 100 eggs, 44.5×30.7 . Max.: 49×33.3 and 47.2×33.4 . Min.: 39.7×30.1 and 47.1×28.4 mm. *Breeding-season*.—Occasionally from May 12th onward but generally not till early June. *Incubation*.—Chiefly by female, male only taking small part. Period 20–24 days (Hantzsch). Probably single brooded.

FOOD.—Feathers found in large quantities in stomach together with traces of fish (small freshwater species); mollusca (*Planorbis*, etc.);

insects, including diptera (larvæ of Tipulidæ) and coleoptera (water-beetles); crustacea (shrimps, etc.) and vegetable matter (water-weeds, confervæ and in winter sea-weed).

DISTRIBUTION.—*British Isles.*—Resident in small numbers and passage-migrant (early May to mid-June, early Sept. to late Nov.), winter-visitor. A few breed (increasing) in north mainland Scotland, and some evidence that it has bred elsewhere. Otherwise regular winter-visitor all coasts and occasional inland waters, also has occurred a good many times in summer, chiefly Scotland and Ireland.

DISTRIBUTION.—*Abroad.*—Norway, southern Sweden and Oeland, Iceland, Denmark, Finland, Baltic republics, Russia, northern Asia to Transbaikalia and Amur; also in N. America, Canada and Alaska. On migration and in winter whole Europe and Mediterranean, Asia to about 24° and China, America to S. California and Florida. Casual Azores, Greenland, Færoes, Jan Mayen, Commander Islands.

PODICEPS GRISEIGENA

353. *Podiceps griseigena griseigena* (Bodd.)—THE RED-NECKED GREBE.

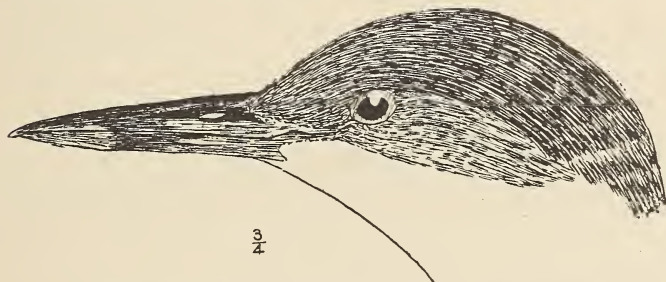
COLYMBUS GRISEGENA *corr.* *GRISEIGENA* Boddaert, Tabl. Pl. Enl., p. 55 (1783—Ex Daubenton, Pl. Enl. 931. No locality stated. We fixed in 1912 as the typical locality: France).

Podiceps ruficollis Latham, Gen. Synops. Suppl., i, p. 294 (1787—Ex Synops., v, p. 288, Gt. Britain).

Podiceps griseigena (Boddaert), Yarrell, iv, p. 124; *Podicipes griseigena* (Boddaert), Saunders, p. 719.

DESCRIPTION.—*Adult male and female. Summer.*—Fore-head, crown, two tufts of elongated feathers on each side of crown black, feathers with white bases; back of neck black, feathers with chestnut bases; whole upper-parts brown-black, feathers narrowly edged pale brown; chin, upper-throat and sides of head uniform grey divided from black of top of head by narrow white line (these grey feathers somewhat longish but not forming a tippet); rest of throat, sides of neck and upper-breast rich chestnut with bronzy tinge on breast; rest of under-parts silky-white more or less spotted blackish, varying number of feathers having subterminal spots or short streaks of brown-black; feathers of sides of breast and flanks mostly brown-black or with large tips of brown-black and usually with considerable amount of rufous basally; axillaries and under wing-coverts white; primaries grey-brown with black shafts; secondaries mostly white with shafts black basally and outer feathers with varying amount of brown usually confined to outer webs and bases, inner feathers partly brown and white (sometimes tinged rufous), innermost black-brown; wing-coverts grey-brown except innermost which are black-brown and upper series of lesser which are white and often tinged rufous on inner feathers. This plumage is

acquired by complete moult of body, tail, innermost secondaries and innermost greater coverts but not rest of wing Dec. to May and often summer feathers still growing June. *Winter*.—Fore-head, crown (no tufts) and back of neck dark grey-brown ; rest of upper-parts darker brown (but paler than summer) and feathers edged brown-grey ; under and behind eye finely mottled grey-brown ; rest of sides of head, chin and upper-throat white ; lower-throat and sides of neck brown, feathers lightly tipped whitish ; rest of under-parts silky-white, feathers on sides of body with some small subterminal black-brown dots and marks, those of flanks with larger spots or tips of black-brown (considerably less marked than in summer) ; wings as in summer but innermost secondaries



The Red-necked Grebe (*Podiceps g. griseigena*). Adult, winter.

and greater coverts not quite so black. This plumage is acquired by complete moult probably as in *P. cristatus* but autumn moulting material is insufficient to make a definite statement possible.

Nestling.—Head and neck striped as in Great Crested Grebe but black on each side of crown wider and white patch in centre of back of crown reduced to a stripe ; light stripes on neck dull buffish and those down centre of back of neck narrowed and obscured by black and those on upper-mantle very narrow and scarcely noticeable ; rest of upper-parts, base of throat, sides of body, flanks and vent brown-black unstriped ; centre of breast and belly white ; black stripes down sides of neck broken about middle and two stripes down sides of lower-throat joining and forming V (not inverted as in Great Crested Grebe).

Juvenile.—Resembles adult summer but upper-parts with slightly more brownish tinge ; sides of head, chin and upper-throat dull buffish-white with two rather broad and fairly well defined brown-black stripes behind eye, a patch at base of under mandible and varying amount of brown-black mottling on chin and upper-throat ; rest of throat to base and sides of neck buffish-chestnut varying in depth but never so dark and rich as in adult ; under-parts not so silky-white as adult and flanks paler brown, partially concealed spots on upper-breast and sides of body paler and not so distinct as in adult ; wings as adult but white secondaries often more mottled with brown at tips.

First winter.—When juvenile body-feathers are entirely moulted becomes apparently like adult winter. The juvenile body-plumage (not wings) sometimes begins to moult Aug., but sometimes in Dec. moult has not proceeded very far. Very few juvenile moulting to 1st winter have been available for examination.

Measurements and structure.—♂ wing 160–180 (one 190) mm., tarsus 50–58, bill from feathers 35–45 (12 measured). ♀ wing 155–176, bill 35–40. Primaries: 1st very small and hidden, 3rd longest, 2nd and 4th sometimes as long but usually 1–4 mm. shorter, 5th 8–14 shorter, 6th 15–21 shorter; 3rd and 4th distinctly and 2nd and 5th slightly emarginated near tips of outer webs and 2nd and 3rd on inner webs. Rest of structure as in *P. cristatus*.

Soft parts.—Bill black, base of lower mandible and cutting edge of upper at base lemon-yellow, (winter and juv. sides and tip greyer, base duller); legs and feet blackish on outside tarsus and underside lobes, yellowish-white to greenish-yellow inside tarsus and upperside lobes; iris (ad.) dark brown, (juv.) yellowish.

CHARACTERS AND ALLIED FORMS.—*P. g. holboellii* (N.E. Asia, N. America) has longer bill and wing. Size intermediate between Great Crested and Slavonian, yellow base to bill, spotted sides of body and in summer red throat and grey cheeks and no “tippet” distinguish this from other British Grebes.

FIELD-CHARACTERS.—Characteristic features of breeding plumage are rich chestnut fore-neck, pale slate-grey cheeks and conspicuously yellow base of bill. Differs from Great Crested Grebe in winter by lacking white superciliary streak, has darker upper-parts, comparatively shorter neck and stouter build.

BREEDING-HABITS.—Found on lagoons, backwaters of large rivers and lakes. *Nest*.—Usual heap of weeds, and miscellaneous vegetable matter in water with depression in middle for eggs. *Eggs*.—Usually 4–5, occasionally 6, dull white with soft chalky surface, readily absorbing stains. Average of 100 eggs, 50.6×33.9 . Max.: 57×35.5 and 55.4×36.5 . Min.: 46.7×33.8 and 50×30 mm. *Breeding-season*.—From end April, but usually in May and early June. *Incubation*.—By both sexes in turn. Period according to Naumann 3 weeks. Single brooded.

FOOD.—Small fish (roach up to 6 in., etc.); frogs; insects (chiefly water-beetles and *Notonecta*) together with numerous feathers and traces of vegetable matter (confervæ, etc.). Also in winter crustacea (small crabs, etc.).

DISTRIBUTION.—*British Isles*.—Winter-visitor (arriving from mid-Sept.). Chiefly east coast Great Britain south of Forth, usually uncommon but sometimes in considerable numbers, occasional south coast England, rare west side Great Britain (not recorded O. Hebrides), fairly frequent Orkneys, only occasional Shetlands, only twelve obtained in Ireland. Rare inland waters.

DISTRIBUTION.—*Abroad*.—Europe from northern Russia west to

Denmark and through Germany south-east to Dobrogea, Caspian Sea, and western Asia. In winter Mediterranean countries (Marocco (where said to breed), Algeria, Tunisia, Egypt). Replaced by an allied race in N. America, east Siberia, rare in Greenland and casual Iceland, wintering farther south.

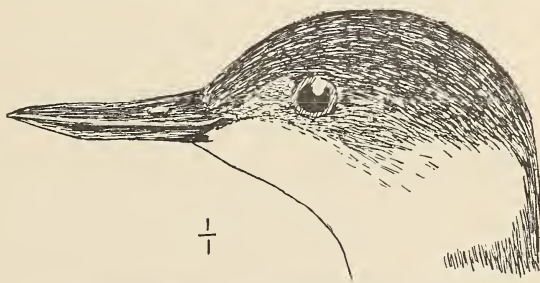
PODICEPS NIGRICOLLIS.

354. *Podiceps nigricollis nigricollis* Brehm.—THE BLACK-NECKED GREBE.

PODICEPS NIGRICOLLIS Brehm, Handb. Naturg. Vög. Deutschl., p. 963 (1831—E. Germany).

Podiceps nigricollis C. L. Brehm, Yarrell, iv, p. 133 ; *Podicipes nigricollis* C. L. Brehm, Saunders, p. 723.

DESCRIPTION.—*Adult male and female. Summer.*—Fore-head, crown and neck jet-black (feathers of crown somewhat elongated and wedge-shaped being broader at tip than at base) ; mantle and scapulars not quite so intensely black as crown ; back dark brown ; centre of rump and upper tail-feathers black, sides of rump and lower tail-feathers chestnut with black tips and some with white bases ; chin and throat jet-black (feathers at sides somewhat elongated) ; below and above back of eye through ear-coverts a broad patch of golden-chestnut (feathers very narrow, long and of silky texture) ; upper-breast with some mixture of white and a little chestnut giving a mottled appearance ; sides of breast and flanks chestnut and black, feathers being mostly chestnut with black tips ; vent pale brown, feathers down-like and tipped whitish or rufous-buff ; whole of rest of breast and belly silky-white ; axillaries and under wing-coverts white ; primaries brown with black shafts and pale brown inner webs and white at extreme



The Black-necked Grebe (*Podiceps n. nigricollis*), Winter.

base, 7th developed primary and sometimes 6th or even 5th tipped white and with inner web mottled white, 8th and 9th same but sometimes with inner webs mostly white except at base, 10th mostly white with some black at base of outer web, 11th same but often with some black at tip (amount of white on inner primaries thus varies) ; secondaries white, inner ones with more or less black at tip and innermost entirely black ; all wing-coverts black-brown. This plumage is acquired by moult of body-feathers and tail but not of wing-feathers or wing-coverts Feb. to May. *Winter.*—A complete moult including wings commences sometimes July,

usually complete Dec., but sometimes still some moult Jan. Crown, mantle and scapulars black with slightly more brownish tinge than in summer, on each side of lower nape a white patch not quite meeting in centre of back of neck, feathers of which have long black tips and white bases; back black-brown; sides of rump and tail white, tipped black, ear-coverts browner than crown; chin, cheeks and upper-throat white; lower-throat brown, feathers lightly tipped white; breast and belly silky-white, feathers of sides of breast with subterminal blackish-grey spots, flank-feathers with long black tips, vent brownish, feathers tipped white.

Nestling (Plate 7).—Upper-parts blackish with light stripes very ill-defined, very narrow greyish stripes on each side of crown and over eye and down back of neck but those on mantle and back scarcely noticeable and much broken and hidden, stripes on sides of head and sides of neck better defined and more prominent but considerably broken and not regular, narrow inverted V-shaped blackish stripe on each side of chin and sometimes narrow short one in centre but usually centre of chin as throat white without stripes; centre of breast and belly white, sides black with flecks of white on flanks, vent blackish. Bill flesh with two transverse blackish bands across both mandibles. Bare spot on crown and lores bright pink. As feathers grow they push out down which adheres to them as described under Great Crested Grebe, and upper-parts become black-brown sprinkled with greyish-white.

Juvenile.—Much like adult winter but upper-parts browner black, sides of nape tinged buff, throat paler, flanks not so much marked with black.

First winter.—Like adult. The juvenile body-plumage is moulted Sept.-Jan. but not wings or wing-coverts.

Measurements and structure.—♂ wing 127–136 mm., tarsus 41–46, bill from feathers 22–25 (12 measured). ♀ wing 124–132, bill 20–24. Primaries: 1st very small and hidden by coverts, 2nd longest, 3rd as long or 1–3 mm. shorter, 4th 3–5 shorter, 5th 8–15 shorter, 6th 16–22 shorter; 2nd to 4th emarginated near tips on outer and inner webs. Bill short, flattish and rather broad at base, pointed and compressed at tip, distal half of upper mandible tilting slightly upwards and gonys sloped sharply upwards. Other structure as in Great Crested Grebe.

Soft parts.—Bill blue-grey shading to pinkish at base, tip whitish, top of culmen black; legs and feet greenish- to bluish-grey tinged flesh on lobes, outside of tarsi and underside of toes dark sepia; iris orange-pink with silvery inner ring round pupil; bare loreal strip brownish-flesh.

CHARACTERS AND ALLIED FORMS.—*P. n. gurneyi* (S. Africa) is rather paler and smaller and adult usually has rufous lesser wing-coverts, while winter plumage is similar to summer; *P. n. californicus* (N. America) has inner primaries without white, Black-necked distinguished from Slavonian Grebe by up-tilted bill

and white on inner primaries, also in summer by black fore-neck, in winter and juvenile by brown of crown extending below eye and on ear-coverts; considerably larger than Little Grebe and smaller than Red-necked.

FIELD-CHARACTERS.—In breeding plumage *black* neck and tuft of golden feathers radiating from eye across black cheek distinguish it from Slavonian Grebe, to which it approximates in size. Closely resembles that species (*q.v.*) in winter, but dark colour of crown extends below eye; an infallible distinction is the slender tip-tilted bill. Call-note a soft “pee-ep.” In breeding-season utters a rippling trill, “bidder, vidder, vidder, vidder”; alarm-note, “whit, whit.” Hunger cry of young closely resembles that of Great Crested and Little Grebes.

BREEDING-HABITS.—Haunts lagoons, reedy ponds and reservoirs, and where plentiful breeds in colonies. *Nest.*—Usual heap of wet water-weeds and vegetable matter built up in water and sheltered by reeds and water-plants. *Eggs.*—Usually 4, occasionally 3, 5 or even 6, while 7 and 8 are on record from Germany, white when fresh, with chalky surface which absorbs nest-stains rapidly. Average of 100 eggs, 43.9×30.2 . Max.: 48.5×32 and 40×34 . Min.: 39×27.1 mm. *Breeding-season.*—From end April onward but usually in May or June. *Incubation.*—By both sexes. Period about 20 days (Pike). Probably single brooded, but not positively known.

FOOD.—Fish only taken to small extent, and main food insects; coleoptera (*Dytiscus* and larva, *Noterus*, *Donacia*, *Badister bipunctatus*, *Phylangibbus*, etc.); hymenoptera (ants); phryganeidæ (caddis-worms) and *Notonecta*. Mollusca, crustacea (*Mysis vulgaris*), and considerable quantities of feathers also recorded from stomachs. Young fed on small fish in Herts (Oldham).

DISTRIBUTION.—*British Isles.*—Resident and winter-visitor, arriving Sept.—Nov. Known to have bred regularly in Wales since 1904, and in west Ireland since 1915 (in a second locality 1918), while a few pairs have also bred at Tring Reservoirs (Herts.) since 1918, and has nested on another reservoir in Bucks.; also some evidence of breeding on occasions in Norfolk, Oxon., and Perth. Otherwise irregular visitor, chiefly autumn to spring, but sometimes summer and most frequently northern half of east coast England, and Merioneth. Elsewhere very uncommon, while in north-west England and west and north Scotland and Orkneys rare vagrant and not known O. Hebrides or Shetlands. In Ireland very scarce. Occasional inland waters.

DISTRIBUTION.—*Abroad.*—From Denmark and Baltic countries southward throughout Europe and through temperate Asia to China and Japan. Straggler to Madeira, Canaries and Azores. Replaced by closely-allied forms in North America, and Africa south of Sahara.

PODICEPS RUFICOLLIS

355. *Podiceps ruficollis ruficollis* (Pall.)—THE LITTLE GREBE.

COLYMBUS RUFICOLLIS Pallas, Vroeg's Cat. Coll., Adumbratiuncula, p. 6 (1764—Holland).

Colymbus fluviatilis Tunstall, Orn. Brit., p. 3 (1771—Great Britain, no deser., but based on Brisson's "Grèbe de la rivière.").

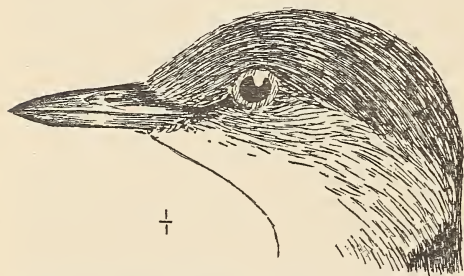
Podiceps Minutus Latham, Gen. Synops., Suppl., p. 294 (1787—Great Britain. Based on "Little Grebe" Latham, Gen. Synops., v, p. 289).

Podiceps Hebridalis id., l.c. (1787—Isl. Tiree, Inner Hebrides).

Sylboecylus Europaeus Macgillivray, Man. Brit. Orn., II, p. 205 (1842—Gt. Britain. New name for *Colymbus minor* Gm.).

Podiceps fluviatilis (Tunstall), Yarrell, iv, p. 137; *Podicipes fluviatilis* (Tunstall), Saunders, p. 725.

DESCRIPTION.—*Adult male and female. Summer.*—Whole upper-parts brown-black somewhat glossy and with slight admixture of brown, back of neck glossy blue-black, sides of rump and tail with admixture of rufous-buff and white; lores, under eye, chin and extending on to upper-throat black; rest of throat, ear-coverts and sides of neck chestnut; (feathers of sides of head and back of crown somewhat long but no tufts or tippet); upper-breast more or less black, some feathers with white tips which become more or less worn off; rest of breast and belly mixture of black and silky-white (amount of black on under-parts varies individually but is always increased as summer advances by growth of new feathers and by wearing away of white tips); flanks black, bases of feathers white and those of lower-flanks rufous-buff; vent grey-brown; axillaries and under wing-coverts white; primaries grey-brown,



The Little Grebe (*Podiceps r. ruficollis*). Adult, winter.

tips blackish, extreme bases of inner webs white; secondaries brown, inner webs of outer feathers with considerable amount of white, which increases on inner feathers and extends to outer webs and tips (amount of white varies considerably individually), innermost feathers more blackish and white confined to base of

inner webs; greater and median coverts dull grey-black, tips browner and new innermost feathers blacker; lesser coverts paler black-brown. This plumage is acquired by moult of body-feathers and tail and a few innermost wing-coverts and one or two innermost secondaries commencing Feb. and continuing even as late as June and July. *Winter.*—A complete moult commences in August; moult of body gradual extending to Nov. and Dec.; moult of wings very rapid, all wing-feathers, greater and median-coverts being shed simultaneously (lesser coverts shortly afterwards) Aug.—Oct.

Whole upper-parts brown with more or less admixture of black, not so glossy as in summer and back of neck black-brown, sides of rump and tail with admixture of white and some buff; chin white with often some black feathers intermixed; under eye, ear-coverts, sides of neck and throat brown-buff with admixture of chestnut (varying number of new black feathers on chin and chestnut ones on throat and sides of neck are grown in autumn); base of throat and sides of upper-breast buff-brown; flanks buff-brown, some feathers with blackish tips and often some rufous on lower-flanks; rest of breast and belly silky-white with some blackish or brown sub-terminal marks; vent grey-brown; wings as summer. N.B.—Some melanistic examples in summer are almost black on under-parts and have little chestnut and mostly black on sides of neck and throat, in winter throat black-brown and under-parts much mottled black-brown.

Nestling (Plate 7).—Fore-part of crown grey-white; rest of upper-parts and neck black-brown, narrow stripe over eye rufous-buff, stripe behind eye, small patch on each side of base of crown and on ear-coverts greyish-white; two stripes down chin and throat pale buff (whitish on chin) divided by narrow black line; neck and upper-parts striped with rufous-buff in much same pattern as Great Crested Grebe but rufous stripes narrow and black predominating especially on neck; sides of breast and belly and vent black and centre of under-parts white. Bill with a black band near base going only half across lower mandible.

Juvenile.—Upper-parts black-brown much as adult winter, on each side of back of crown a few rufous feathers and on back of neck some white feathers; cheeks, behind eye and sides of neck dark brown and buff-brown (neck sometimes with some rufous-buff) with irregular patches and streaks of white; chin dull white often mottled brown; throat extending on to upper-breast buff-brown; sides of breast and flanks buff-brown, shafts and tips of feathers blackish; vent blackish-grey; rest of under-parts silky-white often with some faint brown marks; wing-feathers and upper and under wing-coverts as adult.

First winter.—Whole upper-parts browner not so blackish as adult winter or juvenile; from base of upper mandible, under eye, ear-coverts, sides of neck, throat and upper-breast buff-brown with no rufous feathers; chin white; sides of breast and flanks buff-brown as juvenile, tips of feathers and shafts blackish; rest of under-parts silky-white with no black or brown. The juvenile body-plumage and tail are moulted July-Dec. N.B.—Period varies apparently according to time of hatching as some are still in juvenile plumage in Dec. while others are in first winter in Sept. *First summer*.—Appears to moult rather later than adult but seems to be like it when fully moulted except that wing-feathers become paler brown and under-parts have perhaps less black, though of this I cannot be sure.

Measurements and structure.—♂ wing 96 (one 90)–104 mm.,

tarsus 34-39, bill from feathers 18 (one 15)-21 (12 measured). ♀ wing 94-103, bill 16-18.5. Primaries: 1st very small and hidden, 3rd longest, 4th as long or 1 mm. shorter, 2nd 1-4 shorter, rarely as long, 5th 2-6 shorter, 6th 6-10 shorter, 7th 10-14 shorter; 3rd and 4th emarginated outer webs and 2nd and 3rd (sometimes 4th) inner webs. Bill as Slavonian Grebe but shorter and comparatively stouter. Rest of structure as in Great Crested Grebe.

Soft parts.—Bill (ad.) black, extreme tip whitish, gape and skin at base of under mandible yellow-green; (juv.) yellowish-horn; legs and feet greenish-black, inside tarsus and inner and middle toes mostly dull olive-green; iris red-brown.

CHARACTERS AND ALLIED FORMS.—*P. r. poggei* (China) has finer bill and is chestnut not black under back of eye; *P. r. japonicus* (Japan) is intermediate between last and typical form; *P. r. philippensis* (Philippines) is like *poggei* but has blacker upper-parts and longer bill; *P. r. novæhollandiæ* (Australia) has black throat, chestnut sides of neck; *P. r. capensis* (Africa, India, Persia, Turkestan) has white bases to primaries and more white on secondaries. Small size, comparatively thick bill, red throat and absence of tippet in summer, and buff-brown fore-neck and flanks in winter distinguish Little Grebe.

FIELD-CHARACTERS—Cannot be confused with any other Grebe. Breeding plumage lacks tippet and crests; fore-neck, cheek and throat dark reddish-brown; base of bill and gape bright yellowish-green. Dingy brown and buff of winter plumage very distinct from pure black and white of Slavonian and Black-necked Grebes, and bird is rather smaller. Rippling trill uttered in spring as well as "whit, whit" of alarm closely resemble calls of Black-neck, as does hunger cry of young.

BREEDING-HABITS.—Haunts still reaches on rivers as well as ponds and lakes. *Nest*.—Similar to other Grebes: a heap of wet and warm water-weeds in water, often under shelter of tree overhanging water or in clump of giant rush. Eggs covered with weeds during absence of parent. *Eggs*.—Usually 4 to 6, occasionally 7, while 8 and even 10 have been recorded, white or creamy when first laid but later stained to sepia-brown, orange or deep red. Average of 100 British eggs, 37.8×26.2 . Max.: 43×27.4 and 39.2×28.3 . Min.: 32.8×23.7 mm. *Breeding-season*.—Usually begins April, but eggs recorded in March and even up to Sept., so probably more than one brood reared at times. *Incubation*.—Shared by sexes. Period estimated at 18-20 days (O. Lee); 20 days (Heinroth); 25 days (M. P. Tuck).

FOOD.—Feathers only rarely recorded in stomach but pebbles not infrequently; fish, especially Sticklebacks (*Gasterosteii*), while Miller's Thumb (*Cottus*) has caused death by choking; mollusca (*Lacuna*, *Rissoa*, *Bythinia*, *Littorina*, *Valvata*, *Planorbis*, *Limnæa* and *Paludina*); insects, including coleoptera (*Agabus*, *Pterostichus*,

Calathus, etc., also Phryganeidæ, frequently *Notonecta*, larvæ of odonata, and diptera; crustacea (*Gammari*). Also vegetable remains.

DISTRIBUTION.—*British Isles*.—Resident. Generally distributed, but less plentiful northern Scotland. In autumn, immigrants occur east coast England, and in winter many go down to tidal waters.

DISTRIBUTION.—*Abroad*.—From about lat. 62° north, southwards throughout Europe to north Africa, eastwards at least to Ural. Casual Færoes and Canaries. Replaced by more or less closely-allied forms in tropical and south Africa, various parts of Asia, Australia, New Zealand.

FAMILY COLYMBIDÆ (URINATORIDÆ).

No dorsal vertebræ fused; spina externa present, interna absent; sternum much longer than in *Podicipidæ*, without notches. Plumage quite different from that of *Podicipidæ*, harder, not soft and “furry.” Tail very short but obvious, 16–20 rectrices. Ten developed and one rudimentary primary. Pullus not striped. Nests on land. Eggs oily-brown, spotted, without chalky covering. One genus with 4 species, northern portion of Northern Hemisphere.

Genus COLYMBUS L.

COLYMBUS Linnæus, Syst. Nat., ed. x, 1, p. 135 (1758—Type by subsequent designation, of Gray 1855, *C. arcticus*).

Characters, see under Family COLYMBIDÆ.

Key to species of genus COLYMBUS.

- | | | | | |
|---|---|--|---|---|
| 1 | { | Fore-neck black with bluish gloss | 2 | |
| | | Fore-neck rufous in middle | | <i>C. stellatus</i> ad., summer, p. 474 |
| | | Fore-neck white | 4 | |
| 2 | { | Crown and hind-neck grey | | <i>C. arcticus</i> , ad., summer, p. 471 |
| | | Crown and hind-neck black | 3 | |
| 3 | { | Bill black, culmen slightly curved | | <i>C. immer</i> , ad., summer, p. 466 |
| | | Bill whitish, culmen straight | | <i>C. adamsii</i> , ad., summer, p. 469 |
| 4 | { | Upper-side with small white or whitish spots or bars | | <i>C. stellatus</i> , winter & juv., p. 473 |
| | | Upper-side with or without grey edges | 5 | |
| 5 | { | Much larger, bill over 70 mm. | 6 | |
| | | Much smaller, bill less than 70 mm. | | <i>C. arcticus</i> , winter & juv., p. 470 |
| | { | Culmen slightly curved | | <i>C. immer</i> , winter & juv., p. 465 |
| 6 | | Culmen straight | | <i>C. adamsii</i> , winter & juv., p. 469 |

COLYMBUS IMMER

356. *Colymbus immer* Brünn.—THE GREAT NORTHERN DIVER.

COLYMBUS IMMER Brünnich, Orn. Bor., p. 38 (1764—Færoes).

Colymbus glacialis Linnæus, Yarrell, iv, p. 96; Saunders, p. 709.

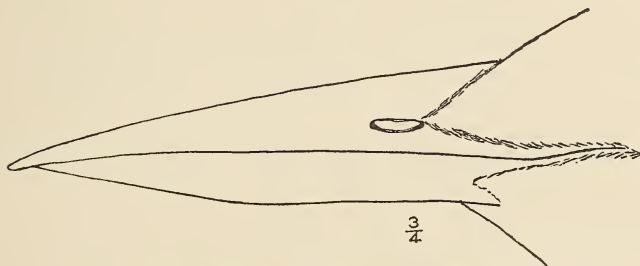
DESCRIPTION.—*Adult male and female*. *Winter*.—Fore-head, crown and back of neck dark brown, feathers of neck somewhat down-like

and whitish bases often ill-concealed ; whole of rest of upper-parts dark brown, feathers margined grey-brown to grey ; outermost under scapulars with dull white edges or white subterminal bands ; between nostrils and eye feathers brown, tipped white ; under eye, chin, throat and rest of under-parts white, but feathers along sides of neck tipped brown, giving somewhat mottled appearance ; feathers of sides of lower-throat and upper-breast with brown centres and white edges, giving somewhat streaked appearance ; sides of breast and flanks brown, some feathers with white outer webs and edges ; across vent narrow band of brown ; under tail-coverts brown, broadly tipped white ; axillaries white with dark brown median streaks ; under wing-coverts white, lower ones with pale brown median streaks ; tail-feathers dark brown tipped white ; primaries and secondaries black-brown tips and outer webs, dark brown shafts, paler brown inner-webs ; wing-coverts as rest of upper-parts but many lesser with small ill-defined whitish subterminal spots and innermost sometimes with white subterminal bars. This plumage is acquired by complete moult Aug. (sometimes July) to Jan. Primaries, primary-coverts and secondaries are moulted simultaneously but wing-coverts and innermost secondaries normally. Sometimes some old summer body-feathers, wing-coverts and innermost secondaries are retained until next moult. *Summer*.—Another complete moult similar to that of autumn takes place Feb.–May. Whole head and neck all round velvety-black, slightly glossed green on back of head, neck and throat, and with mauvish tinge on sides of head, lower part of throat and neck all round much more strongly glossed greenish-purple, in middle of throat a prominent line of short white parallel vertical streaks, on each side of lower-neck a similar line of longer streaks not quite meeting in centre of throat or back of neck (these streaks are formed by series of feathers larger and of stronger structure than those of rest of neck and throat and with even white margins on each side of webs) ; rest of upper-parts black glossed greenish and thickly spotted with white, each feather having a pair of subterminal spots of more or less square shape, those on upper-mantle very small, becoming large on lower-mantle and still larger on scapulars, back and rump with very small spots and upper tail-coverts unspotted ; breast and belly white, sides of upper-breast glossy-black streaked white, feathers being much like those forming white streaks on neck ; flanks as upper-parts, feathers with small white spots and sometimes two on outer webs, feathers nearest breast with inner webs white streaked black or whole feather white with black streak ; across vent a line of dark brown, some feathers having white subterminal spots or white edges ; under tail-coverts brown-black tipped white ; axillaries and under wing-coverts as winter but central streaks darker ; tail-feathers glossy-black with no white tips ; primaries and secondaries as winter but outer webs and tips black glossed purplish, innermost secondaries with white spot on outer webs ; primary-coverts as primaries ; wing-coverts

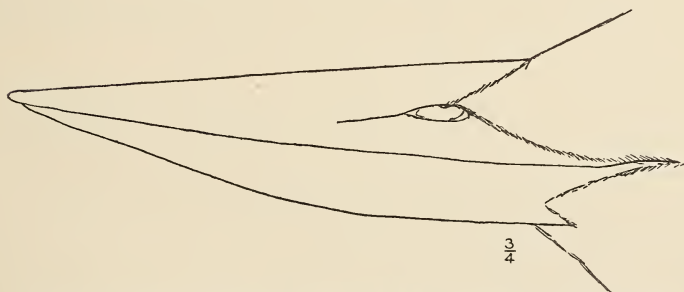
as rest of upper-parts but not quite so glossy, greater coverts sometimes with a second pair of duller white spots.

Nestling.—1st down rather short thickly covering whole body and especially thick on under-parts. Upper-parts dark mouse-brown, whole chin, throat and fore-neck greyish-brown, all round breast and belly brown-grey shading to white which covers whole of centre of under-parts. 2nd down like 1st but decidedly paler on upper-parts.

Juvenile. Male and female.—Much like adult winter but edges of feathers of upper-parts paler grey and more prominent (feathers



The Great Northern Diver (*Colymbus immer*).



The White-billed Northern Diver (*C. adamsii*), showing difference in shape of bills.

more rounded less square-tipped than in adult and grey margins more even); under eye, ear-coverts and sides of neck more finely streaked brown; throat more or less finely streaked or freckled brown; flanks paler brown; axillaries with paler brown and broader median streaks; vent mottled brown, not pure white as adult; under tail-coverts brown, tipped grey-brown instead of white as adult; tail-feathers tipped pale brown instead of white.

First winter.—The juvenile plumage is only partially moulted in Dec. and Jan. many juvenile body-feathers being retained, also all primaries and secondaries and most wing-coverts, though a few innermost are moulted, sometimes whole tail but often only part. All new feathers as adult winter. *Summer.*—Bird appears to remain in above plumage until Aug. or later, when wing-feathers

especially are very worn and moult to 2nd winter begins. Subsequent plumages apparently like adult.

Measurements and structure.—♂ wing 340–380 (one 408) mm., tail 54–73, tarsus 76–98, bill from nostril 58–70 (12 measured). ♀ wing 330–385, bill 53–67. Primaries: 1st very small and hidden by primary-coverts, 2nd longest, 3rd as long or 1–5 mm. shorter, 4th 12–20 shorter, 5th 30–45 shorter, 6th 50–65 shorter; outer primaries sharply attenuated at tips but not definitely emarginated, secondaries short, tips broad and notched. Tail short, much rounded (fan shaped), 18 or 20 feathers, rather stiff, tips rounded. Upper and under tail-coverts almost as long as tail. Bill very strong and compressed, tapering to sharp point, upper mandible with upper line descending gradually to tip, sides rather rounded, gonys sloped upwards and tip of under mandible finer than that of upper. Nostrils small, slit-like with tooth-shaped projection about centre. Most of tibia enveloped by skin and legs thus inserted very far back. Tarsus short and extremely compressed. Three toes long and webbed, hind toe minute and elevated; claws convex, rounded and rather nail-like.

Soft parts.—Bill in winter pale grey (juv. paler more bluish-white), ridge of upper mandible blackish-slate extending over sides to nostrils, tip horn-colour, in summer bill blacker; legs and feet (ad.) outside nearly black, inside very pale grey, webs same with flesh-coloured centres, (juv.) paler, outside dusky, inside milky blue-white; iris (ad.) wine-red, (juv.) red-brown.

CHARACTERS.—*C. i. classon* (western N. America) stated to be smaller requires confirmation. For differences of *C. adamsii* see under that species. Much larger size distinguishes it from other Divers.

FIELD-CHARACTERS.—Exclusively aquatic, Divers are in Britain mainly marine, but inland lakes are resorted to in nesting season and casually at other times. In swimming and diving they equal if not excel Grebes, from which they differ in larger size, bulkier bodies—carried higher when swimming—stout necks and lack of extravagant tippets and ruffs in breeding-season. All are loquacious in spring and summer, uttering loud uncanny wails and hoarse barking cries. Breeding dress of Great Northern differs from that of Black-throated in throat-band and collar, profuse white speckling of entire upper-parts and absence of slate-grey crown and hind-neck. In winter plumage the two hardly differ except in size and relative length and stoutness of bill, characters not always reliable in the field. Wailing cry of Great Northern is described as a “loud blood-curdling scream.” Other notes are a loud resonant “hoo-hoo-hoo-hoo” (Jourdain) and a sharp bark, “yap, yap, yap” (Knox).

BREEDING-HABITS.—Met with on larger sheets of water and lakes where water is deep. *Nest.*—In Iceland little more than a flattened spot on tussock close to water or on island, but in Canada often a big heap of vegetable matter in shallow water. *Eggs.*—2, ground-

colour varying from olive to deep umber-brown, and generally some black blotches but not always. Average size of 100 eggs, 89.8×57.6 . Max.: 101.5×62.5 . Min.: 85×54.5 and 86.1×54.3 mm. *Breeding-season*.—From early June onward in Iceland. *Incubation*.—By both sexes. Period 30 days. Single brooded.

Food.—Chiefly fish, including flounders, sand-launce (*Ammodytes*), father-lasher (*Cottus*), gurnard, pipe-fish, herring, etc. Also crustacea (crabs (*Portunus*, *Carcinus*, etc.), shrimps, prawns, etc.); mollusca (*Solen*); cephalopoda, and vegetable remains.

DISTRIBUTION.—*British Isles*.—Winter-visitor (mid-Sept. to May). Fairly generally distributed all coasts, but most plentiful in north. In O. Hebrides and Shetlands present most times of year, and has been thought several times, but never proved, to have bred in latter. Not uncommon inland waters.

DISTRIBUTION.—*Abroad*.—Breeding Iceland, Greenland and eastern N. America; apparently Jan Mayen. Wintering North Sea, south to western Mediterranean and even rarely Madeira and Azores, once or twice Baltic Sea, casually inland waters Europe as far as Bohemia and Transylvania, Black Sea; in America known to North Carolina. According to Bishop replaced by smaller race in interior of N. America from N. California north at least to British Columbia, wintering chiefly on coast of California south to Lower California and Florida.

COLYMBUS ADAMSII

357. *Colymbus adamsii* Gray — THE WHITE-BILLED NORTHERN DIVER.

COLYMBUS ADAMSII Gray, Proc. Zool. Soc. London, 1859, p. 167 (Alaska).
Colymbus adamsi Gray, Yarrell, III, p. x; Saunders, p. 711.

DESCRIPTION.—*Adult male and female*. *Winter*.—Like *C. immer* but shafts of primaries (except at tips) pale brown to brownish-white instead of dark brown.* Very few moulting examples available but appears to moult as in *C. immer*. *Summer*.—Complete moult as in *C. immer*. Like *C. immer* but whole head, neck and throat glossed purple rather than green, white streaks on throat and neck broader but fewer in number, white spots on upper-parts larger, this being especially noticeable on scapulars, shafts of primaries as in winter pale brown.

Nestling.—(Not examined.)

Juvenile.—As in *C. immer* but shafts of primaries (except at tips) pale brown, lesser wing-coverts rather more streaked with grey than in *C. immer*.

Measurements and structure.—♂ wing 375–395 mm., tail 56–67, tarsus 89–96, bill from nostril 60–76 (4 measured). ♀ wing 360–385,

* One example (Brit. Mus.) has dark brown shafts, so that this character appears not to be invariable.—H.F.W.

bill 67–75. Seven unsexed examples : wing 365–395, bill 65–80. Bill thus usually longer than in *C. immer* and shape different, upper line of top of upper mandible being remarkably straight and not descending towards tip, sides of bill flatter not so rounded as in *C. immer*, upward slope of gonys more abrupt than in *C. immer* and forming a more sharply defined angle with line of basal half, giving tip of lower mandible slightly upturned appearance.

Soft parts.—As in *C. immer* but bill of adult whitish-yellow tinged brownish at base, of young whitish, dusky at base.

BREEDING-HABITS.—Very little definitely recorded but probably resembles Great Northern Diver closely. *Nest*.—On hummock surrounded by water or a few feet back from water's edge on island or close to edge of pool on tundra. *Eggs*.—2, very similar in coloration to those of *C. immer*. Average of 17 eggs, 89×56.9 . Max. : 95×60 and 92×66 . Min. : 80×56 and 85×53.5 mm. (Bent). *Breeding-season*.—From early June in Alaska onward. *Incubation*.—No exact data ; probably similar habits to *C. immer*.

FOOD.—Hardly any reliable information. Fish, including *Cottus*, nearly 11 in. long (Collett).

DISTRIBUTION.—*Great Britain*.—One near Embleton (Northumberland) Dec., 1829, one Pakefield, near Lowestoft (Suffolk) spring 1852. [One Hickling (Norfolk) Dec., 1872, one Northumberland Jan., 1879, one Loch Fyne (Argyll.) autumn 1893, and another Suffolk are *C. immer*. Others recorded Emsworth Harbour (Hants) winter 1895–6 and Filey (Yorks.) Jan., 1897, are uncertain, cf. *Brit. Birds*, xvi, pp. 9–12 and 59.]

DISTRIBUTION.—*Abroad*.—Arctic portions of Northern Hemisphere from Taimyr eastward in Old World. In winter more to the south ; in America to Nushagak, Alaska, Greenland, in Europe rare Scandinavia, Finland, Caspian Sea, Austria-Hungary and apparently twice in Italy. Casual Japan and Commander Islands.

COLYMBUS ARCTICUS

358. *Colymbus arcticus arcticus* L.—THE BLACK-THROATED DIVER.

COLYMBUS ARCTICUS Linnæus, Syst. Nat., ed. x, i, p. 135 (1758—Europe and America. Restricted typical locality ; Sweden).

Colymbus arcticus Linnæus, Yarrell, iv, p. 105 ; Saunders, p. 713.

DESCRIPTION.—*Adult male and female*. *Winter*.—Fore-head, crown and back of neck brown washed greyish ; base of back of neck and rest of upper-parts black-brown and somewhat glossy, some scapulars with a pair of small subterminal whitish spots ; under-parts white ; white on sides of head extending from base of lower mandible under eye and slightly backwards on sides of nape with slight mottling at juncture of white and brown ; usually a narrow line of brown-tipped feathers across upper-throat ; at base of sides of neck and sides of upper-breast white, feathers next to brown

of upper-parts with brown shaft-streaks ; flanks dark brown, feathers next to white with outer webs mostly white ; narrow dark brown line across vent usually incomplete ; under tail-coverts : lower ones black-brown tipped white, upper ones white ; axillaries white sometimes with dark brown shafts and terminal shaft-streak ; under wing-coverts white, lower ones with pale brown median streaks ; tail-feathers black, tipped white ; wing-feathers with glossy brown-black outer webs and tips, dark brown shafts and paler brown inner webs ; wing-coverts brown. This plumage is acquired by complete moult Aug.—Nov. Primaries, primary-coverts and secondaries are moulted simultaneously, but wing-coverts normally. *Summer*.—Another complete moult as in autumn takes place Feb.—May. Fore-head and lores dark slate-grey ; crown, and back of neck extending on to sides at nape ashy-grey, base of back of neck merging into blue-black of mantle and upper-parts ; down each side of mantle a column of short rows of square spots (each feather with subterminal white band divided by narrow black shaft-streak), similar but longer and broader columns of larger spots on scapulars, rest of upper-parts uniform blue-black but sides of back and rump tinged brown ; sides of head as crown but below eye and lower ear-coverts washed black-brown merging into black of chin ; throat black slightly glossed greenish-purple ; across upper-throat a prominent line of short white parallel vertical streaks (each feather having even white margins on each side of webs) ; down, sides of neck long white streaks ; sides of upper-breast same but towards centre black reduced to streaks ; flanks glossy black and black-brown line across vent ; rest of under-parts white, but lower under tail-coverts black-brown tipped white ; tail-feathers brown-black with no white tips ; wing-feathers as winter ; wing-coverts glossy black with twin oval white spots but feathers along front edge of wing and primary-coverts unspotted.

Nestling.—1st down rather short, thickly covering whole body and especially thick on under-parts, dark mouse-brown, breast and belly paler and greyish. 2nd down.—Like 1st down but decidedly paler both on upper- and under-parts, centre of breast and belly whitish. 1st down adheres to tips of 2nd which is succeeded by feathers bearing at first these two downs at their tips. Another short greyish-white down is to be found under long brown down of upper-parts and this grows just before the feathers sprout and is apparently under-down of juvenile and not a nestling down.

Juvenile.—Crown and back of neck like adult winter but browner and less greyish ; rest of upper-parts dark brown, feathers with ashy-grey margins, prominent on mantle and scapulars, less conspicuous on rump and upper-tail-coverts ; sides of neck adjoining white of throat more finely mottled brown than in adult and mottling sometimes extended on to throat ; brown line across vent prominent ; lower under tail-coverts dark brown with narrow white tips ; tail-feathers dark brown with narrower white tips than in adult ; wing-feathers and primary-coverts as adult but all wing-

coverts with grey-brown tips. N.B.—Grey tips of feathers of upper-parts and white tips of tail become considerably worn by January.

First winter and summer.—From Jan. onwards a varying amount of body-moult takes place, new feathers of mantle and scapulars being uniform black as in adult winter but usually considerable number of old juvenile feathers are retained; tail also moults (usually partially) new feathers having white tips as adult winter; wing-feathers and wing-coverts are not moulted. This mixture of plumages appears to be retained throughout first summer until bird is rather more than one year old when moult to winter plumage commences and after this is complete bird is apparently indistinguishable from adult, but insufficient material is available to make certain of these points.

Measurements and structure.—♂ wing 280–335 mm., tail 50–61, tarsus 72–80, bill from nostril 40–50 (8 measured). ♀ wing 268–320, bill 33–43. Primaries: 1st very small and hidden, 2nd longest, 3rd 2–8 mm. shorter, 4th 12–22 shorter, 5th 32–46 shorter, 6th 52–65 shorter. Other structure as in *C. immer*.

Soft parts.—As in *C. immer*.

CHARACTERS AND ALLIED FORMS.—*C. a. pacificus* (N. America) is smaller and in summer has paler back of neck and less prominent white streaks on sides of neck; *C. a. suschkini* (W. Siberia) is stated to have paler back of neck and rather larger white spots on upper-parts and *C. a. viridigularis* (E. Siberia) to have green rather than purple throat. Distinguished from *C. immer* in summer by grey back of neck, adult winter by absence of grey fringes to feathers of upper-parts, juvenile by smaller size.

FIELD-CHARACTERS.—In breeding dress large white spots on wing-coverts and scapulars and unspotted back, wings and tail contrast with uniformly spotted upper-parts of Great Northern, as does grey of crown and hind-neck. In winter-plumage the two are very similar, and, although Black-throated is smaller as a rule, sizes sometimes overlap. Differs from Red-throated in winter by feathers of upper-parts not being tipped with spots of white but margined with pale grey. Wailing cry described as an unearthly agonized howl; a hoarse alarm-note is like croak of Raven (Collett); another note is a yapping “hy, hy, hy” (Kolthoff).

BREEDING-HABITS.—Prefers deep-water lochs, often in hills. *Nest.*—Usually flattened spot near margin of island or shore of lake, but nests built of aquatic vegetation recorded from Continent. *Eggs.*—Normally 2, 1 in second or third layings, but 3 young have been recorded together. Intermediate in size between those of *C. immer* and *C. stellatus*, varying from greenish-olive to dark umber with blackish blotches or spots in some cases. Average of 100 eggs, 84.5×51.7 . Max.: 95×52.5 and 82×56 . Min.: 75.7×51.8 and 87×45.5 mm. *Breeding-season.*—Latter half May and early June in Scotland. *Incubation.*—By both sexes in turn. Period 28 days (Zedlitz). Single brooded.

FOOD.—Mainly fish, including roach, *Gobius*, trout, etc.; also crustacea (crabs and prawns). Naumann also includes frogs as rarely taken.

DISTRIBUTION.—*British Isles*.—Resident and winter-visitor (mid-Oct. to May). Breeds in small numbers Perth, Argyll, and more commonly Inverness, Ross, Sutherland, Caithness and O. Hebrides, and occasionally Skye and Orkneys. To Shetlands very rare visitor, but has possibly bred. Elsewhere uncommon winter-visitor and rarest of the Divers (except *C. adamsii*). Especially rare west coast England and Wales and in Ireland. Rare vagrant inland.

DISTRIBUTION.—*Abroad*.—Scandinavia, Finland, northern Russia, Baltic provinces and north-eastern Germany as far as Brandenburg (rare). In winter south to Mediterranean and Black Sea. Casual Iceland, Færoes, Spitsbergen, Novaya Zemlia, Kolguev (probably this form). Replaced by allied subspecies in western Siberia and Turkestan (*suschkini*) (probably Caspian in winter), western and eastern N. America (*pacificus*), and north-eastern Siberia and Alaska (*viridigularis*).

COLYMBUS STELLATUS

359. *Colymbus stellatus* Pontoppidan—THE RED-THROATED DIVER.

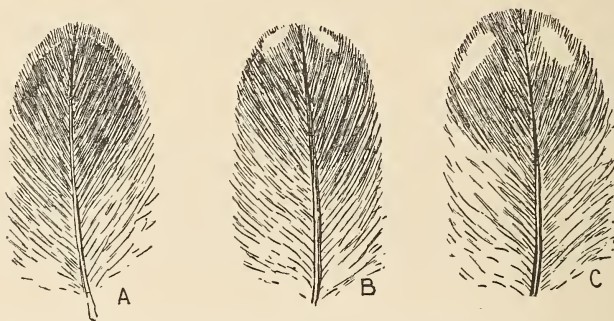
COLYMBUS STELLATUS Pontoppidan, Danske Atlas, I, p. 621 (1763—Ex Willughby, pl. 62. Denmark).

Mergus Nævia Tunstall, Orn. Brit., p. 3 (1771—Great Britain. Ex "Grey Speckled Diver" Pennant, Brit. Zool., and "Petit Plongeon" Brisson, Orn., VI, p. 108).

Colymbus septentrionalis Linnæus, Yarrell, IV, p. 112; Saunders, p. 715.

DESCRIPTION.—*Adult male and female. Winter*.—Whole crown and back of neck blackish-grey, finely streaked white (each feather with blackish centre and grey edges with short narrow white streak on each side at tip); rest of upper-parts brown-black closely spotted white (each feather having at tip pair of small white spots well separated and of slightly oblong shape, on scapulars almost rectangular and set obliquely with usually an additional pair of spots proximal to them); under-parts white, including lower part of lores, under eye, and side of neck, feathers joining back of neck tipped blackish and giving mottled appearance which occasionally extends on to throat, sides of upper-breast and flanks more or less streaked black and white and also spotted, feathers having black centres and white edges and often white spots; from side to side across vent narrow and somewhat ill-defined dark line, feathers being brown with white tips; under tail-coverts white, lower ones with basal halves dark brown; axillaries white with black-brown median streaks; under wing-coverts white, those covering primaries with pale brown shaft-streaks; tail-feathers brown-black, narrowly and evenly tipped white; primaries brown-black on outer

webs and tips, paler brown inner webs and whitish at extreme base ; secondaries black-brown, inner ones with narrow white fringes at each side of tip ; primary-coverts as primaries ; wing-coverts brown-black, feathers narrowly fringed white on each side of tip giving appearance of diagonal short streaks on greater and median but smaller and more spot-like on lesser. This plumage is acquired by complete moult Oct.-Dec. Primaries, primary-coverts and secondaries are moulted simultaneously but wing-coverts normally. *Summer*.—Another complete moult similar to that of autumn takes place March-May, sometimes not completed June. Crown somewhat glossy dark grey, streaked blackish, each feather having greyish-black centre ; whole of back of neck extending to sides of upper-mantle black, streaked white, each feather having even white margin on each side of web ; upper-mantle black-brown, washed grey and spotted greyish-white, each feather having at tip a pair of small greyish-white spots as in winter but smaller and less pure



Feathers from mantle of : (A) Black-throated Diver (*Colymbus a. arcticus*), juvenile. (B) Juvenile, (C) Adult, winter, of the Red-throated Diver (*C. stellatus*).

white, a few similar feathers on sides of mantle, otherwise rest of upper-parts usually unspotted glossy black-brown (frequently a few spotted winter feathers are retained and some of these lose white spots by abrasion) ; lores, sides of head, chin, sides of throat and sides of neck uniform dark ash-grey ; down middle of throat long patch of dark chestnut (feathers with grey bases), narrow on upper part and increasing to full width of throat at base ; immediately below this and on sides of upper-breast feathers narrowly streaked black-brown ; rest of breast and belly white ; feathers of flanks black-brown more or less edged white and sometimes with a few small grey spots ; under tail-coverts mixture of brown and white ; axillaries and under wing-coverts as winter ; tail-feathers black-brown very narrowly tipped paler brown (some old winter white-tipped feathers often retained) ; wing-feathers as winter ; wing-coverts much more narrowly and less distinctively fringed greyish-white rather than white and lesser coverts with small greyish spots or fringes and sometimes uniform black-brown.

Nestling.—Like that of Black-throated Diver.

Juvenile.—Like winter adult but crown and back of neck more uniform ash-grey with narrow inconspicuous black-brown streaks; rest of upper-parts much browner, not so black as adult winter and spots more greyish, not so pure white, and smaller, being narrower and longer and forming narrow triangular edges to feathers, this being especially noticeable on scapulars and wing-coverts; under-parts white but cheeks, sides of neck and throat thickly speckled brown; flanks browner than in adult and feathers edged white, not spotted; vent mottled brown; under tail-coverts white with very narrow brown margins, lower ones brown with narrow white tips; tail-feathers brown narrowly tipped greyish, becoming whitish when worn; primaries and secondaries as adult but all latter narrowly tipped white.

First winter.—The juvenile plumage is only partially moulted as in *C. immer* but apparently later (Feb.-Mar.). *Summer*.—A certain amount of moult takes place and some summer plumage is acquired. Insufficient material is available to decide extent of this moult but April examples have a mixture of juvenile and first winter body-feathers and tail-feathers with some red feathers growing on throat and some grey on sides of head, all wing-feathers old and very worn.

Measurements and structure.—♂ wing 276-310 mm., tail 42-55, tarsus 67-78, bill from nostril 38-46 (12 measured). ♀ wing 257-308, bill 33-44. Primaries: 1st very small and hidden by primary-coverts, 2nd longest, 3rd as long or sometimes 1-3 mm. shorter, 4th 7-12 shorter, 5th 25-38 shorter, 6th 40-50 shorter. Rest of structure as *C. immer*.

Soft parts.—Bill pale grey with dark stripe along top of culmen (juv. rather paler); legs and feet outside and outer toe nearly black, rest pale grey, mottled dark grey at joints of toes, webs flesh-coloured in centre with dark grey margins; iris (ad.) wine-red, (juv.) red-brown.

CHARACTERS.—No subspecies. Spotted upper-parts in winter and juvenile and red throat in summer distinguish it from other Divers.

FIELD-CHARACTERS.—Vinaceous-chestnut throat-patch and grey face and neck are outstanding features of summer dress. In winter, slender bill and white specks on upper-parts are best guide to identity. Jourdain likens cry to short, sharp wail of a hurt child, repeated at intervals. Another note is a hoarse, repeated "kork."

BREEDING-HABITS.—Often on quite small pools as well as lochs and at times may be met with breeding in considerable numbers both in Norway and Iceland. *Nest*.—Variable; sometimes merely a flattened patch on a hummock close to the water; at other times a mass of wet moss and weeds built up in shallow water or near the margin. *Eggs*.—2 normally, though 3 said to occur; elongated,

varying in ground from olive-brown or greenish-olive to umber, generally but not always spotted or blotched sparsely with blackish. Average of 100 eggs, 74×45.8 . Max. : 81.3×47.9 and 72×48.8 . Min. : 66×45.1 and 68×41 mm. *Breeding-season*.—Latter half May and early June in Scotland. *Incubation*.—Shared by sexes, but probably chiefly by female. Period 24–28 days (Faber). Single-brooded.

FOOD.—Mainly fish, especially herring, but also flounder, coal-fish, sprat, sand-eel, trout, dace, gudgeon and northern char. Also mollusca (*Mytilus*, etc.) and occasionally larger water-insects, and crustacea. Vegetable remains occasional.

DISTRIBUTION.—*British Isles*.—Resident and winter-visitor. Breeds from south Inverness northwards, in Orkneys, Shetlands and O. Hebrides, and in co. Donegal. Otherwise common winter-visitor (mid-Sept. to March) to all coasts, and often ascends rivers and visits inland waters.

DISTRIBUTION.—*Abroad*.—Greenland, Iceland, Færoes, Spitsbergen, Kolguev and Novaya Zemlia, Finland, Scandinavia and north Russia, east through Siberia to Kamtschatka and Commander Is., perhaps also Sachalin; Aleutian Is. and N. America from Alaska to Newfoundland and Labrador. On passage and in winter from Iceland to Mediterranean, Baltic Sea to Black and Caspian Seas, China, Formosa, Japan; in America to California, Florida and Maine.

ORDER C O L U M B Æ.

Contains the Pigeons and Doves. A well circumscribed group. Skull schizognathous and holorhinal; basi-pterygoid processes present, except in Dodo and ally, which differ in many ways. Oil-gland bare or absent. Basal part of bill not horny but covered with more or less soft and swollen skin, which envelops the usually slit-like nostrils as with a cap. Tarsus differently covered, generally with feathers on uppermost part. Feathers soft and plentiful, as with a "bloom," loose in skin, skin soft; aftershaft rudimentary or absent. Primaries 11, wing usually aquitocubital, sometimes quintocubital. Rectrices 12–20. Hallux connected with flexor longus hallucis, not with flexor perforans digitorum. Crop strongly developed, as in Gamebirds. Young born blind, nidicolous. Real down absent. Nests in caves or holes of trees, very light open structures on trees or on ground. Eggs white (only in few tropical forms yellow), nearly always 2, but sometimes 1, very seldom more than 2. Nearly 500 forms in nearly all parts of globe except arctic and subarctic. Division in families not satisfactory at present, but Dodos (*Raphus*, *Didus* auct.) and *Treronidæ* (tropical, mostly green, some white, or other bright colours) apparently deserve family rank, some Australian forms require study.

In British Isles only one family admitted.

FAMILY COLUMBIDÆ.

See characters under order *Columbæ*.

Key to genera of Family COLUMBIDÆ.

Upper part of tarsus covered by feathers, tail shorter . . . *Columba*
 Tarsus quite bare, tail longer and often more graduated . . . *Streptopelia*

Genus COLUMBA L.

COLUMBA Linnæus, Syst. Nat., ed. x, i, p. 162 (1758—Type by subsequent designation of Vigors 1825, *C. ænas*).

Large Pigeons, long wings, tail square or very slightly rounded, 12 rectrices. Tarsus shorter than middle toe with claw, upper part overhung by feathers. About 60 species in all continents, but only 3 British. Situation of nests variable.

Key to species of genus COLUMBA.

- | | | | |
|---|---|---|-----------------------------|
| 1 | { | Longitudinal white stripe along wing . . . | <i>C. palumbus</i> , p. 477 |
| | | No white longitudinal stripe on wing . . . | |
| | { | Neck and jugulum with metallic gloss in front . . . | <i>C. livia</i> , p. 482. |
| 2 | | Metallic gloss on hind-neck and sides, but not on jugulum . . . | <i>C. ænas</i> , p. 480. |

COLUMBA PALUMBUS

360. *Columba palumbus palumbus* L.—THE WOOD-PIGEON.

COLUMBA PALUMBUS Linnæus, Syst. Nat., ed. x, i, p. 163 (1758—"Europa. Asia." Restricted typical locality: Sweden).

Columba palumbus Linnæus, Yarrell, III, p. 1; Saunders, p. 479.

DESCRIPTION.—*Adult male and female. Winter and summer.*—Whole head, ear-coverts, chin and throat grey-blue; sides and back of upper-neck metallic-green with purplish reflexions; followed on lower-neck by zone of metallic-purple, which is divided from green on sides of neck by patch of white (feathers often tinged cream subterminally and basal portions of these and metallic feathers brown); mantle and scapulars grey-brown (becoming browner in worn plumage); back, rump and upper tail-coverts grey-blue; whole breast brown-purple (tinged grey when fresh), becoming paler on lower-breast and merging into ashy blue-grey of belly and under tail-coverts; flanks, axillaries and under wing-coverts grey-blue; tail-feathers broadly tipped brown-black, with broad central band of pale grey (paler on outer feathers and whitish from below) and dark grey bases (blackish from below); primaries black-brown, outer webs broadly and inner webs narrowly edged white but outer web of outer primary with narrow and dull grey-white edge; secondaries brown washed grey and outer webs ashy-grey with narrow white edges to outer feathers, innermost grey-brown as mantle; primary-coverts brown-black very narrowly edged grey-white; outermost feathers of wing-coverts white, followed by grey with white outer webs, forming together broad

white line down wing, rest of wing-coverts as mantle. This plumage is acquired by complete moult May to Oct. N.B.—A number of primaries are sometimes moulted almost simultaneously, but this "rapid" moult though fairly frequent is not normal.

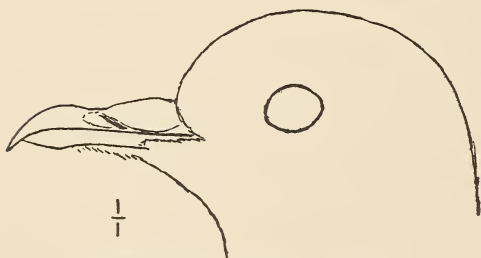
Nestling (Plate 7).—Covered with tufts of coarse hair-like down of a pale straw-colour, down is sparse and skin of lead-blue with tinge of flesh-colour shows through; lores, round eyes, whole of chin and narrow space down centre of belly bare of down. Nestling down is replaced by juvenile feathers to tips of which it adheres. Inside mouth pink, flanges pale flesh.

Juvenile.—Head and throat duller grey than adult and feathers of crown tipped rusty-brown; neck uniform brownish-grey with no metallic colours nor white patches; mantle grey-brown; scapulars same narrowly tipped rufous-brown; back and rump dull grey; upper tail-coverts grey-blue, narrowly tipped rufous-brown; breast vinous-rusty; belly ash-grey, feathers tipped rufous; under tail-coverts grey-white, feathers tipped yellowish-brown; axillaries and under wing-coverts grey-blue, feathers along edge of wing tipped rufous; tail as adult; wing as adult but primaries, innermost secondaries, primary-coverts and all wing-coverts narrowly tipped rufous-brown. Chin and gape bare, feathers subsequently grow on these parts at commencement of moult to first winter.

First winter and summer.—Like adult but sometimes juvenile outer primary and one or two brown-tipped outer primary-coverts and coverts along edge of wing are retained. The juvenile plumage is completely moulted usually July–Oct., but owing to irregular breeding period moulting juveniles are found in all months. First winter body-plumage (especially back and rump) begins to grow before juvenile outer primaries are complete.

Measurements and structure.—♂ wing 235–255 mm., tail 140–156, tarsus 30–37, bill from feathers 21–24 (12 British measured).

♀ wing 235–255. Primaries: 1st very small and hidden by primary-coverts, 3rd and 4th longest but occasionally one 2 mm. shorter, 2nd and 5th 9–20 shorter, 6th 28–40 shorter; 3rd to 5th slightly emarginated on outer webs. Tail square, 12 feathers, tips slightly rounded.



The Wood-Pigeon (*Columba p. palumbus*).

Bill rather slender at tip, upper mandible slightly decurved and projecting, base rather flat and broad, with soft fleshy membranes, irregularly granulated, over nostrils which have slit-like openings in fore and lower part of membranes. Tarsi very short, feathered in front nearly half-way down. Toes fairly long,

three directed forwards and one on same level backwards, somewhat flattened underneath; claws rather slender, slightly curved and rather sharp.

Soft parts.—Bill pink, tip yellowish to dull white; legs and feet pink with mauve tinge; iris pale straw-colour.

CHARACTERS AND ALLIED FORMS.—*C. p. excelsa* (N.W. Africa) averages larger but measurements overlap; *C. p. maderensis* (Madeira) has considerably darker upper-parts and wing-coverts, usually creamy neck-patches and averages smaller; *C. p. azorica* (Azores) is similar to last but stated to have outer tail-feathers with less black tips; *C. p. casiotis* (E. Persia, Baluchistan to Turkestan) has dark cream-coloured neck-patches. Wood-Pigeon easily distinguished from all other British Pigeons by white band on wing.

FIELD-CHARACTERS.—White patch on side of neck (except in young) and white bar across wing separate this large, heavily-built bird from other British Pigeons. Usual haunts are woods, plantations and copses, but most of its food is obtained on ground in fields and open country. Assembles in large flocks from autumn to spring. Rises with noisy clatter of wings. In flight, which is direct and rapid, and accomplished by continuous wing-beats, breast protuberant, as in other Pigeons. Almost mute in winter, but from March to October the love-call, a deliberate and thrice repeated “kuk-oo-roo, coo-oo,” ending with an abrupt “kuk,” is frequent.

BREEDING-HABITS.—Habitat very general, wherever there are trees. *Nest.*—Very slight, built of twigs often in high hedges or whitethorn trees, among ivy in forest trees, etc. Exceptionally on buildings in towns, on or close to ground in heath, and on ledges of rocks in parts of Wales. *Eggs.*—2 normally, 3 quite exceptional, white, very glossy. Average of 100 British eggs, 41.1×29.8 . Max. : 47.8×33 . Min. : 36.6×28 and 42.2×26.6 mm. *Breeding-season.*—Usually April to Aug. or Sept., but nests on record in nearly every month from Jan. and Feb. to Oct. *Incubation.*—By both sexes. Period 17th day (W. Evans); $15\frac{1}{4}$ days (Heinroth). Two or more broods annually.

FOOD.—Literature of food extensive. Collinge summarizes 388 cases: Corn (chiefly barley and oats) 144 times (2480 grains), clover and turnip leaves 123 times, potatoes 27 times, beans 19 times (133), peas 11 times (104), grass seeds 4 times. Many injurious seeds also distributed through fæces. As many as 61 acorns have been found in one crop, 28 hazel-nuts in another, and 1020 grains of corn in a third. Although mainly a vegetable eater, larvæ of lepidoptera (*Hybernina progemma* and *H. defoliaria*), earthworms, snails (*Succinea*), and small grey slugs have been recorded from crops. Beech-mast, holly, and ivy-berries also largely eaten.

DISTRIBUTION.—*British Isles.*—Resident, passage-migrant and winter-visitor. Generally distributed, but only passage-migrant

Shetlands, though breeds sparingly Orkneys and O. Hebrides. Considerable immigration east coast Great Britain autumn (mid-Sept. to mid-Nov.) and return spring (end March to end May). Generally more abundant winter, but varies in numbers and localities affected.

DISTRIBUTION.—*Abroad*.—Europe generally, as far east as Persia. Casual Færoes and Iceland. Replaced by closely-allied forms in Azores, Madeira, and central Asia, and an ill-defined one in Atlas Mts., Marocco to Tunisia.

COLUMBA CENAS

361. *Columba cenas* L.—THE STOCK-DOVE.

COLUMBA OENAS Linnæus, Syst. Nat., ed. x, i, p. 162 (1758—Europe. Quotations partially err. Restricted typical locality : Sweden).
Columba cenas Linnæus, Yarrell, III, p. 8 ; Saunders, p. 481.

DESCRIPTION.—*Adult male and female. Winter and summer*.—Whole head, ear-coverts, chin and throat grey-blue ; sides of back of neck metallic-green or purple according to angle of light ; mantle and scapulars slate-grey with brown tinge more marked in female than male ; back, rump and upper tail-coverts grey-blue ; lower-throat and upper-breast brown-purple tinged grey ; rest of under-parts including axillaries and under wing-coverts blue-grey, but axillaries rather more ashy and under tail-coverts rather darker ; tail-feathers broadly tipped brown-black, with narrow subterminal band of pale grey followed by narrow blackish band always incomplete, more marked on outer feathers and very variable, rest (basal part) of feathers dark grey, basal half of outer web of outermost feather grey-white or often quite white ; primaries brown-black with grey tinge, browner on inner webs and both webs very narrowly edged whitish, inner primaries blue-grey on basal half or more of outer webs ; secondaries as inner primaries but blue-grey on outer webs extending nearer tips, inner feathers brown-grey, innermost three with black subterminal patches on outer webs ; primary-coverts brown-black ; all wing-coverts grey-blue becoming rather browner (as mantle) on inner feathers, inner greater coverts with black subterminal patches as innermost secondaries and two or three inner median coverts usually with smaller black patches, these with secondaries forming short broad bars on inner portion of wing. This plumage is acquired by complete moult May to Nov. and sometimes Dec.

Nestling.—Like that of Wood-Pigeon but down of considerably richer and deeper colour. Inside mouth pink, flanges pale flesh.

Juvenile.—Much like adult but head and neck browner not so grey, a few feathers on sides of neck with metallic-green tips but otherwise neck as crown ; mantle, scapulars and wing-coverts browner than adult ; lower-throat and upper-breast brownish-red not so purple ; wing-feathers browner not so black and black marks

on inner secondaries and coverts smaller and often absent from some feathers. Chin and gape bare, feathers subsequently grow on these parts during moult to first winter.

First winter and summer.—Like adults. The juvenile plumage is completely moulted usually May to Sept. but sometimes in winter months, depending on date of hatching, the moult commencing before juvenile wing-feathers are fully grown.

Measurements and structure.—♂ wing 210–226 mm., tail 102–115, tarsus 28–32, bill from feathers 19–21 (12 British measured). ♀ wing 210–225. Primaries: 1st very small and hidden, 3rd and 4th longest, 2nd 3–12 mm. shorter, 5th 12–16 shorter, 6th 28–32 shorter; 3rd to 5th slightly emarginated on outer webs. Tail slightly rounded, 12 feathers, tips very slightly rounded. Rest of structure as Wood-Pigeon.

Soft parts.—Bill yellowish-horn, basal part mauve-pink; legs and feet mauve-pink; skin round eyes pink; iris brown.

CHARACTERS.—Several subspecies separated but these require confirmation. Grey colour, absence of any white, absence of metallic colour on breast and short black bars on inner part of wings distinguish this from other British Pigeons.

FIELD-CHARACTERS.—At close quarters a patch of iridescent metallic-green on side of neck, in adult, and vinous throat and breast are apparent, but general impression, whether bird is at rest or in flight, is of a dark blue-grey pigeon of medium size with inner part of wings and fringe of tail black. Differs from Wood-Pigeon in lacking white on neck and wings and from Rock-Dove in its blue rump, axillaries and under wing-coverts. Flies faster than Wood-Pigeon but does not attain Rock-Dove's speed. Habits like those of Wood-Pigeon, with which it often consorts in winter, but its wider choice of nesting-sites does not restrict it to woods and plantations, and it is found in summer in parks where there is old timber, about cliffs, both inland and maritime, sand-dunes and warrens. Love-call a far-sounding, grunting "coo-oo," repeated three or four times.

BREEDING-HABITS.—Haunts districts where old timber is plentiful, but also found commonly near sand-dunes and in rocky country.

Nest.—Usually inside hole of old elm or chestnut; but also often in rabbit-hole, in sand-dune or in fissures of crags, in heath on face of cliffs, old nests, old buildings, under furze-bushes, etc. *Eggs.*—2, exceptionally 3, white with faint creamy tinge, glossy but less so than those of Wood-Pigeon. Average of 100 British eggs, 37.9×29 . Max.: 43×30.3 and 36×31 . Min.: 34×28 and 34.5×26.5 mm. *Breeding-season.*—Usually from end March onward to July and exceptionally from early March to Sept. and even Oct. *Incubation.*—By both sexes. Period $15\frac{1}{2}$ – $16\frac{1}{2}$ days; two broods normally, probably 3 occasionally.

FOOD.—Similar to that of Wood-Pigeon. Collinge records grain, clover leaves, swede and turnip-leaves, beans and peas in about

same proportion. 206 small snails taken from one crop and seeds of various weeds recorded.

DISTRIBUTION.—*England and Wales.*—Resident. Local but widely distributed. In extreme north England has become resident and increased since about 1870. Occasionally observed as immigrant east coast. *Scotland.*—Resident. First definitely recorded as nesting about 1877. Has spread rapidly since, and now breeds throughout southern counties, and although not north of Clyde area on west side, on east breeds as far north as Sutherland, where first nest found 1889. To Caithness, Orkneys and Shetlands very rare vagrant and unrecorded from Hebrides. *Ireland.*—Resident. First recorded 1875, and first nest 1877, now breeds (increasingly) in many parts Leinster and Ulster, and as far west as co. Galway.

DISTRIBUTION.—*Abroad.*—Europe and western Asia, east to at least Asia Minor and Transcaspia. Northern birds are migratory and winter in Mediterranean countries, south to Algeria and Marocco. According to Russian authors replaced by four subspecies in Yarkand, north Persia, Tian-shan, and Ferghana, but these are nearly all unknown to us and require confirmation, Yarkand specimens in Brit. Mus. do not seem to be separable.

COLUMBA LIVIA

362. *Columba livia livia* Gm.—THE ROCK-DOVE.

COLUMBA LIVIA (*C. domestica* B) Gmelin, Syst. Nat., i, ii, p. 769 (1789—part. No locality stated; we accepted in 1912 south Europe as the typical locality).

Columba affinis Blyth, Journ. Asiat. Soc. Bengal, xiv, p. 862 (1845—South England, varieties, probably crossed with domestic Pigeons).

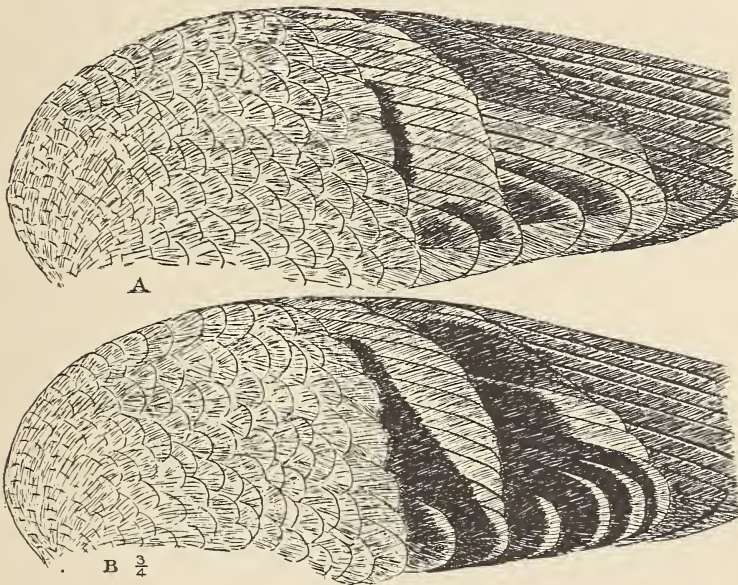
Columba Selbyi Reichenbach, Vollst. Naturg., Tauben, p. 56 (1862—England. Based on pl. 12 in Selby, Nat. Libr., xix, Orn., Pigeons, where bad figure, probably due to artist's carelessness—see for example picture of *C. ænas*).

Columba livia Gmelin, Yarrell, ii, p. 13; Saunders, p. 483.

DESCRIPTION.—*Adult male and female. Winter and summer.*—Crown, sides of head and chin grey-blue; all round neck extending from nape to upper-mantle and from base of ear-coverts and throat to upper-breast metallic-green or purple according to angle of light, but more purple than green on upper-breast; mantle and scapulars considerably paler and more ash-grey than crown, feathers very narrowly edged duller grey; back, extending to sides and upper-rump white or greyish-white and occasionally very pale grey with no pure white; lower-rump and upper tail-coverts blue-grey rather darker than crown; under-parts slate-grey varying in shade, under tail-coverts usually rather darker; axillaries and under wing-coverts white, but coverts along edges of wings slate-grey; tail-feathers broadly tipped brown-black, rest slate-grey, basal half of outer web of outermost feather grey-white or white; primaries brown-grey on outer webs, tips darker and inner webs ash-grey,

becoming whitish at base ; secondaries ash-grey, outer half with black-brown tips and inner half with broad black subterminal band on outer webs but extending across both webs of innermost feathers ; primary-coverts ash-grey, darker on edges of outer webs ; rest of wing-coverts ash-grey as mantle but greater coverts with broad subterminal black band on outer webs but extending across both webs of innermost feathers, and forming with secondaries double black bar across wing. This plumage is acquired by complete moult June–Nov. sometimes Dec.

Nestling.—(Not examined.)



Portion of wings of (A) the Stock-Dove (*Columba œnas*), (B) the Rock-Dove (*C. l. livia*).

Juvenile.—Whole head, throat to upper-breast, and neck to upper-mantle dark brownish-slate ; mantle and scapulars paler and greyer with brown tinge ; back as adult ; lower-rump and upper tail-coverts browner and darker than adult and feathers very narrowly fringed black-brown ; under-parts darker and browner than adult with a little slate tinge ; under wing-coverts not so white as adult, mostly pale slate and those round edge of wing brown, very narrowly fringed grey-white ; tail as adult but basal half of outer webs of outermost feathers greyer and not so white ; wing-feathers as adult but browner and primaries with very narrow whitish fringes at tips ; black bands on secondaries and greater coverts usually not so even and strong as in adult ; all wing-coverts pale grey-brown narrowly fringed greyish-white. Chin and gape

bare, feathers subsequently grow on these parts during moult to first winter.

First winter and summer.—Like adults. The juvenile plumage is completely moulted April to Oct. depending on date of hatching, moult commencing before juvenile wing-feathers are fully grown.

Measurements and structure.—♂ wing 215–230 mm., tail 100 (one 90)–112, tarsus 30–34, bill from feathers 18–21 (12 British measured). ♀ wing 210–222. Primaries: 1st very small and hidden, 3rd longest, 4th 2–6 mm. shorter, 2nd 5–12 shorter, 5th 16–25 shorter, 6th 33–40 shorter; 3rd to 5th slightly emarginated outer webs. Tail slightly rounded, 12 feathers, tips very slightly rounded laterally. Rest of structure as Wood-Pigeon.

Soft parts.—Bill lead-colour, basal part mealy-white; legs and feet dull red; iris orange-red with yellow inner ring.

CHARACTERS AND ALLIED FORMS.—*C. l. canariensis* (Canary Is.) averages smaller and has slightly darker under-parts, back white marked grey; *C. l. schimperi* (Egypt, Nubia) is palest form, back ash-grey as mantle; *C. l. gaddi* (S.W. Persia) is not quite so pale as *C. l. schimperi* but paler than *C. l. livia*, back grey as mantle but sometimes white; *C. l. palestinae* (Palestine, Mesopotamia, Arabia) is doubtfully distinct from *C. l. gaddi*; *C. l. butleri* (Red Sea Prov.) has been separated as smaller than *C. l. palestinae* but on very scanty material; *C. l. neglecta* (Turkestan, Afghanistan, East Persia, N.W. India) is much like *C. l. livia*, back grey to grey-white; *C. l. intermedia* (India) is darker than all above, back grey as mantle. Typical Rock-Dove distinguished from Stock-Dove by white or whitish rump and under-wing and black bars right across wings.

FIELD-CHARACTERS.—In British Isles restricted to rocky coasts. So-called “Rock-Doves” of inland cliffs are either Stock-Doves or feral dove-cot pigeons, and latter not infrequently consort and breed with wild Rock-Doves on coast-cliffs. Approximates in size to Stock-Dove, but is paler, has two distinct black wing-bars (apparent only at close-quarters) whilst rump, axillaries and under wing-coverts are white, not blue-grey. The love-call “coo-roo, coo-oo-oo” is indistinguishable from that of domestic pigeon.

BREEDING-HABITS.—Pure bred birds confined to wilder parts of our coasts where rocks and caves supply nesting-sites. *Nest.*—Merely a few bents, bits of heather, or even sea-weed arranged in hole or ledge of cliff, often far inside a sea-cave and generally close to sea. *Eggs.*—2 normally, white and somewhat glossy. Average of 77 eggs, 39.3×29.2 . Max.: 43×29.8 and 41.3×31.5 . Min.: 35.4×27.4 and 39.5×26.5 mm. *Breeding-season.*—Probably extends from Feb. to Oct., though most eggs are laid from April onward. *Incubation.*—By both sexes, but hen takes greater part. Period 19 days (Bonhote). Evidently two or three broods reared in one season.

FOOD.—In partial absence of cultivation feeds on seeds and mollusca in larger proportions than Wood-Pigeon and Stock-Dove, but 700 grains of oats have been found in one crop. Grain (chiefly oats and barley), peas, beans, potatoes, seeds of many grasses and plants such as *Sinapis*, *Capsella*, *Plantago*, *Triticum*, *Raphanus*, *Vicia*, etc. Also mollusca (*Helicella itala* and *virgata*, *Bulimus acutus*, etc.) and egg cases of *Buccinum* and *Nassa*.

DISTRIBUTION.—*England and Wales*.—Resident. Breeds sea-cliffs Yorks., sparingly Devon and Cornwall, one locality Cumberland and a good many places Welsh coast. *Scotland and Ireland*.—Widely distributed, especially on west coasts and isles.

DISTRIBUTION.—*Abroad*.—Found in Færoes (formerly in Norway), probably coast of Portugal and Spain, Mediterranean countries and islands, Crimea, north-west Africa and Asia Minor. Replaced by allied forms in Palestine, south Persia, Turkestan, Transcaspia, India, Egypt, Nubia to Palestine, Red Sea, parts of west Africa and mountains in Central Sahara.

Genus STREPTOPELIA Bp.

STREPTOPELIA Bonaparte, Consp. Gen. Av., II, p. 63 (1854—Type by subsequent designation by Gray, 1855, *S. risoria*).

Smaller than *Columba*, wings shorter, tails longer, also often more graduated. Tarsus quite bare, not overhung by feathers. About 50 forms in Europe, Africa and Asia, only one breeding British species. Nests always open.

STREPTOPELIA TURTUR

363. *Streptopelia turtur turtur* (L.)—THE TURTLE-DOVE.

COLUMBA TURTUR Linnaeus, Syst. Nat., ed. x, i, p. 164 (1758—"Habitat in India." *Errore*. Ex Willughby, Ray, Albin. Real typical locality: England).

Turtur communis Selby, Yarrell, III, p. 21; Saunders, p. 485.

DESCRIPTION.—*Adult male and female. Winter and summer*.—Head grey-blue, fore-head ashy, feathers of back of crown and centre of back of neck tipped brown when fresh and often some brown left in summer; on each side of neck a patch of black feathers, tipped pale grey-blue, centre ones nearly white; mantle brown, feathers edged more rufous and centres blackish mostly concealed except in worn plumage; back and rump same but blackish centres more pronounced with varying admixture of dark grey-blue and feathers at sides mostly dark grey-blue; upper tail-coverts as rump but tips usually paler and more rufous and lateral feathers tinged blue; chin, throat and breast pale vinaceous (usually duller in female than male), chin more brownish-white, cheeks and ear-coverts tinged brownish; middle of breast, belly and under tail-coverts white; flanks, axillaries and under wing-

coverts grey-blue ; tail : central pair dark brown tinged grey, rest black with grey-blue tinge and white tips, longer on outer feathers and outermost pair with outer webs all white ; wing-feathers dark brown, very narrowly margined whitish, outer webs of primaries slightly and of secondaries more decidedly tinged grey-blue ; primary-coverts brown-black tinged blue-grey ; all outer wing-coverts along edge of wing



The Turtle-Dove (*Streptopelia t. turtur*). Adult.

coverts along edge of wing blue-grey, rest of wing-coverts, innermost secondaries and scapulars black with wide and conspicuous margins of rufous-cinnamon, these becoming narrower and black centres more conspicuous in worn plumage. This plumage is acquired by partial moult of body-feathers in summer quarters July-Sept., and completion with moult of wing-feathers, wing-coverts and tail in Africa. N.B.—Only two winter adults available, one adult Sennaar Dec. is in full moult, another Gambia undated is just completing moult.

Nestling.—Like that of Wood-Pigeon but down slightly paler straw-colour.

Juvenile.—Fore-head brownish-grey ; rest of head and neck brown, more or less tinged grey ; feathers on sides of neck, in area of patches in adult, more blue-grey and some with small brown-black centres ; mantle rufous-brown, lower feathers very narrowly tipped sandy-buff ; scapulars same but with more prominent buff tips and rufous edgings ; back, rump and upper tail-coverts dark brown, feathers very narrowly tipped grey or grey-blue, sides of rump with varying amount of grey-blue feathers ; sides of head, chin and throat pale brownish-grey ; breast rather darker and feathers tipped yellowish-buff ; flanks, axillaries and under wing-coverts rather paler blue-grey than adult ; rest of under-parts white ; tail as adult but central feathers browner and when fresh with small rufous tips ; wing-feathers as adult but edged and tipped rufous and secondaries with only a tinge of blue-grey ; primary-coverts tipped rufous ; blue-grey outer wing-coverts much duller than adult and tinged rufous, median and lesser tipped buff, rest of wing-coverts and innermost secondaries edged rufous and tipped buff.

First winter.—Apparently as adult when completely moulted. The juvenile body-plumage and wing-coverts and sometimes primaries commence to moult in summer quarters Aug.-Sept. but moult is apparently completed in Africa. N.B.—Only one winter example examined (Sennaar, Dec.) was in full moult including primaries.

Measurements and structure.—♂ wing 170–180 mm., tail 96–112, tarsus 23–24, bill from feathers 17–19 (12 measured). ♀ wing 166–175. Primaries : 1st narrow, pointed and about half primary-

coverts, 3rd longest, 2nd occasionally as long but usually 1-4 mm. shorter, 4th 3-7 shorter, 5th 16-20 shorter, 6th 27-34 shorter; 3rd to 5th emarginated outer webs. Tail graduated, outermost pair 15-20 mm. shorter than central, 12 feathers, tips rounded. Tail-coverts about two-thirds as long as tail. Bill and feet as in Wood-Pigeon, but tarsus not feathered.

Soft parts.—Bill blackish, tip yellowish-horn; legs and feet dark pink; iris yellow to yellow-brown; bare orbital space pink.

CHARACTERS AND ALLIED FORMS.—*S. t. arenicola* (N. Africa, Palestine to Persia and Turkestan) is considerably paler on upper- and under-parts; *S. t. isabellina* (Egypt) and *S. t. hoggara* (Mts. Central Sahara) are sandy-coloured on upper-parts and tips of tail-feathers. Small size and brown and rufous upper-parts and wing-coverts and white-tipped black feathers of neck-patches distinguish Turtle-Dove from other British Pigeons.

FIELD-CHARACTERS.—Lacks blue-grey of other British Pigeons, and is altogether smaller and slighter. Its dominant colour is ochreous-yellow spotted with black, and adult has a black and white patch on side of neck. Long graduated tail, black with a broad edging of white, conspicuous in flight. Less addicted to thick woods than Wood-Pigeon, haunts shrubberies, copses, parks, commons and open country if there are bushes and untrimmed hedgerows. Feeds on ground like other Pigeons, which it resembles in its soaring and planing love-flight and general habits. Note, a purring "turr, turr."

BREEDING-HABITS.—Haunts edges of woodlands, high hedges and is very partial to blackthorn and whitethorns for breeding purposes as well as spruce plantations. *Nest*.—A very slight and flimsy structure of fine twigs allowing eggs to be seen from below, generally in bush or on branch of tree but exceptionally on ground. *Eggs*.—2 (3 recorded), white, glossy. Average of 95 British eggs, 30.6×22.9 . Max.: 33.4×23.8 and 31.6×24.6 . Min.: 27.7×22 and 30×21 mm. *Breeding-season*.—Generally from mid-May to June and even July; exceptionally early May. *Incubation*.—By both sexes. Period 13-14 days. Two broods often reared.

FOOD.—Corn is picked up to some extent; also leaves of sainfoin and seeds of many species of weed, especially common fumitory, of which over 1000 (and 700 seeds in a second instance) have been found in one crop; also seeds of plantain, persicary, chickweed, etc.

DISTRIBUTION.—*England and Wales*.—Summer-resident 3rd week April-end May (early dates Feb., 1898, Sussex, Feb. 28, 1913, Scilly, Mar. 31, 1910, Dorset) to 3rd week Aug.-1st week Oct. (late dates Oct. 28, 1908, Hants., Nov. 20, 1918, I. Man, Dec. 21, 1894, Cumberland). Breeds chiefly south, east, and midlands; infrequent Cornwall and western Wales, but has spread to Bangor (Carnarvon) and west Merioneth and Montgomery, much increased Cheshire, infrequent but increasing Lancs., very rare (but has bred)

Cumberland, breeds eastern half Yorks. so far north as Ripon and Whitby. Northwards irregular migrant, but has bred Durham. *Scotland and Ireland*.—Summer- and autumn-visitor. Occurs on passage most parts Scotland, and northern and even western isles, but does not breed. In Ireland regular, but scarce, visitor to south coast, a vagrant to other maritime counties, and rare vagrant inland, chiefly May and June, less frequently autumn, once Nov. 30, and said to have bred two or three times.

DISTRIBUTION.—*Abroad*.—Europe from southernmost Scandinavia (rare) and northern Russia to Mediterranean, Madeira, Canaries, and westernmost Asia; in winter in north Africa, south to Abyssinia and Red Sea. Casual Færoes. Replaced by allied races in north Africa, mountains of Sahara, Egypt, Nubia, Libyan desert, Persia, Turkestan, Afghanistan to Palestine.

STREPTOPELIA ORIENTALIS

364. *Streptopelia orientalis orientalis* (Lath.)—THE EASTERN RUFOUS TURTLE-DOVE.

COLUMBA ORIENTALIS Latham, Ind. Orn., II, p. 606 (1790—China. Ex Sonnerat).

Turtur orientalis (Latham), Saunders, p. 487.

DESCRIPTION.—*Adult male and female. Winter and summer*.—Fore-head ashy, fore-part of crown grey-blue, rest of crown and nape vinaceous-brown tinged grey; on each side of neck patch of black feathers as in Turtle-Dove but tipped darker grey-blue and not white; upper-mantle dark vinaceous-brown; lower-mantle black-brown, feathers tipped rufous; scapulars same but more conspicuously tipped and edged rufous; back and rump dark slate-blue, feathers with blackish centres; upper tail-coverts black-brown tipped slate and often some rufous; sides of head brownish-grey; chin and upper-throat pale buff, often whitish; rest of throat and breast vinaceous almost obscuring grey basal portion of feathers; belly paler and vent ashy; under tail-coverts ash-grey; flanks, axillaries and under wing-coverts slate-blue; tail-feathers black tinged grey and broadly tipped blue-grey, central pair browner and narrowly tipped, outer pair with most of outer web ash-grey; primaries brown-black very narrowly edged and tipped whitish often with rufous tinge, inner primaries and secondaries rather more broadly tipped and edged ash-grey; primary-coverts brown-black, very narrowly tipped grey-white; most of greater wing-coverts and some outer median and lesser tipped and edged grey-blue, innermost greater coverts and secondaries and rest of wing-coverts edged and tipped rufous paler on outer part of wing-coverts and darker as scapulars on inner. This plumage is acquired by complete moult June-Dec. (2 examined moulting Mar. and April). N.B.—In worn plumage nape, mantle and breast become browner and less vinaceous, rufous edges to feathers of upper-parts much narrower and on wing-coverts paler.

Nestling.—(Not examined.)

Juvenile.—Upper-parts much as adult but paler and browner, feathers of head and neck with very narrow rufous tips and those of mantle and scapulars with narrower and more buff (less rufous) tips than in adult ; no neck-patches but feathers in this region usually greyish with brown centres ; back and rump duller and browner than in adult and feathers very narrowly tipped ashy ; feathers of breast mostly dull grey, narrowly tipped buff-vinaceous ; tail-feathers as adult but central feathers browner and tips usually tinged brown ; primaries edged and tipped rufous and grey edges and tips of secondaries and outer wing-coverts often tinged brown ; rest of wing-coverts tipped rufous-buff ; primary-coverts and feathers along edge of wing tipped rufous.

First winter.—Like adult but sometimes juvenile outer primary and primary-covert with rufous tip appear to be retained. The juvenile plumage is otherwise completely moulted Sept.—Jan. (one moulting Mar.).

Measurements and structure.—♂ wing 185–200 mm., tail 108–125, tarsus 25–29, bill from feathers 16–19 (12 measured). ♀ wing 176–195. Primaries : 1st narrow, pointed and about half primary-coverts, 3rd and 4th longest but 4th sometimes 1 mm. shorter, 2nd 1–10 shorter, 5th 9–15 shorter, 6th 22–30 shorter ; 3rd to 5th emarginated outer webs. Other structure as Turtle-Dove.

Soft parts.—Bill dark grey, basal portion dull purple ; legs and feet pink ; iris reddish gold.

CHARACTERS AND ALLIED FORMS.—*S. o. meena* (W. Central Asia, Himalaya) has belly and under tail-coverts white ; *S. o. agricola* (central India, Burmah) has nape and sides of mantle and under-parts rich vinaceous. Distinguished from Turtle-Dove by larger size, much darker coloration and grey (not white) tips to feathers of neck-patches.

BREEDING-HABITS.—Breeds in bushes, clumps of bamboo, etc.

Nest.—Like those of other species, flimsily built of twigs. *Eggs*.—2, white. Average of 28 eggs, 33.6×24.7 . Max. : 36.5×24.6 and 35.4×26.1 . Min. : 30.5×22.3 mm.

Breeding-season.—Extends over whole of spring and summer but most eggs taken in May–June.

Incubation.—By both sexes.

FOOD.—No definite records.

DISTRIBUTION.—*England*.—One. A young bird near Scarborough (Yorks.) Oct. 23, 1889 (Seebohm, *Proc. Zool. Soc.*, 1890, p. 361).

DISTRIBUTION.—*Abroad*.—Manchuria, China, Corea and Japan to Himalayas and central India. Casual in Denmark and Scandinavia. Replaced by allied forms in south-west Siberia, Turkestan to Kashmir and Nepal, Loo Choo Islands and India.

[NOTE.—Five examples of the AMERICAN PASSENGER-PIGEON, *Ectopistes migratorius* (L.), have been recorded as shot in the British Isles ; one had certainly escaped from captivity and probably also the others (Yarrell, III, p. 26 ; Saunders, p. 487). The species is now extinct.]

ORDER PTEROCLETES.

Middle-sized birds, outward appearance and some habits strikingly like Pigeons', but bill suggestive of game-birds, without soft basal part of Pigeons', nostrils covered by feathers except in front. Palate schizognathous, nasals schizorhinal; basi-ptyergoid processes present. Keel of sternum very high, ribs broad. The very short tarsus feathered. Toes wide and short, soles covered with hexagonal or roundish scutes, hallux absent or almost rudimentary. Plumage very close and thick, feathers loose in skin as in Pigeons, aftershafts present. Primaries 11, 5th secondary absent. Rectrices 14-16. Sexes differently, but both always more or less protectively, coloured. Young covered with down, nidifugous. Eggs equally rounded both ends, double-spotted. Two or three genera usually admitted. Inhabitants of steppe and desert countries—south-west Europe, Asia, Africa.

Genus SYRRHAPTES III.

SYRRHAPTES Illiger, Prodr. Syst. Mamm. & Av., p. 243 (1811—Monotype, *Tetrao paradoxa*, Pall.).

Tarsus feathered all round (no bare space along back as in *Pterocles*), toes very broad, entirely feathered above, hind toe (hallux) quite absent. Wings very long and pointed. Two species Central Asia, only one making frequent but irregular visits to Europe.

SYRRHAPTES PARADOXUS

365. *Syrrhaptes paradoxus* (Pall.)—PALLAS'S SAND-GROUSE.

TETRAO PARADOXA Pallas, Reise d. versch. Prov. d. Russ. Reichs, II, p. 712 pl. F (1773—Tartary desert).

Syrrhaptes paradoxus (Pallas), Yarrell, III, p. 31; Saunders, p. 488.

DESCRIPTION.—*Adult male. Winter and summer.*—Crown and neck buffish-grey, fore-head faintly streaked blackish, fore-part of crown, lores, over and under eye and ear-coverts and patch on back of neck washed ochre-yellow, stripe from back of eye broadening to patch on sides of back of neck bright yellowish rust-red; rest of upper-parts warm sand-buff, each feather with broad subterminal black band, scapulars with purplish-brown patch near tip, concealed portion of all feathers with dark brown narrow wavy bars; upper tail-coverts speckled black and longer feathers with black V-shaped lines; chin whitish; throat bright yellowish rusted extending to cheeks but divided from patch on back of neck by grey; lower-throat and breast buffish-grey with gorget of paler feathers with narrow, subterminal black bars; below this breast more buff; belly and flanks black mixed buff, feathers having long black tips not entirely concealing buff basal portions; vent and lower-flanks whitish; under tail-coverts with black central streaks

and bars edged buff and mostly concealed by long white tips and edges; axillaries sand-buff tipped black; under wing-coverts sand-buff, those along outer edge of wing with black shaft-streaks; tail-feathers: tips white, shafts black, along shaft and most of outer web ash-grey, inner webs sand-buff with black comb-like bars, outer webs of inner feathers buff with a few bars, that of outermost white, central pair buff with comb-like black bars across both webs, tip ash-grey and elongated portion black; primaries with black shafts, outer web of outermost black, rest with outer webs and part of inner webs ash-grey, rest of inner webs and narrow fringe of outer webs buffish-grey, inner feathers with broad pale buffish-grey tips on inner webs with subterminal blackish patches; secondaries pale sand-buff, distal halves of outer webs black, narrowly bordered sand-buff, inner feathers greyer on outer webs and with irregular brown bars, innermost secondaries and coverts with purple-brown patches as scapulars; primary-coverts pale sand-buff with black and grey shaft-streaks; wing-coverts sand-buff, greater with distal part of outer webs purple-brown, inner median with a few round black spots and lesser round edge of wing with small black spots. All body-feathers with basal plumulous portion rich chocolate-brown. This plumage is acquired by complete moult commencing with inner primaries in May or June, often complete Oct. but sometimes not until Jan. or even Feb. *Adult female*.—Crown and neck sand-buff, feathers with black spots at tip and black shaft-streaks, fore-part of crown slightly washed yellow, sides of neck with patch of orange paler and smaller than in male; rest of upper-parts as male but feathers with narrower black bars and a penultimate black spot or short bar, thus much more barred appearance than male; throat orange paler than male, feathers at base of throat barred black at tip forming narrow line, below which upper-throat and breast is uniform buffish-grey without gorget; belly deep purple-brown; tail and wing as male, but innermost secondaries barred black and all lesser coverts and inner half of rest of coverts with broad black spots at tip.

Nestling.—Not examined but from figure and description (Newton, *Ibis*, 1890, pp. 207–14, Pl. VII) down on under-parts is longish, soft and separated, that on upper-parts shorter and in more compact tufts as in *S. tibetanus*. General colour of upper-parts cream with pattern of rich brown and sienna patches, patches of latter on sides of head but under-parts uniform buff.

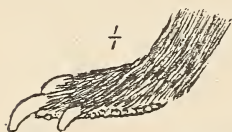
Juvenile. *1st plumage*.—There is evidently a plumage preceding next described and immediately succeeding down but no examples young enough to make description possible are available. Judging by one bird with remains of this plumage it is much like next described but paler buff with paler brown markings on upper-parts, wing-coverts and breast. *2nd plumage*. *Male and female*.—First plumage must moult very shortly after it is acquired, a bird with very few feathers of 1st plumage left has outer (2nd) primaries of its 1st plumage not yet fully grown, yet some feathers of 1st

winter plumage (i.e. its 3rd feathered plumage) are commencing to grow. Upper-parts much like adult female but with no yellow or orange on head, bars browner not so black and penultimate black spot more horse-shoe shaped and larger than in adult, scapulars more closely barred at tip and without purple-brown patches; chin and throat uniform buff; feathers of lower-throat and upper-breast with brown shaft-streaks and loop-shaped marks; lower-breast whitish-buff; smaller area of brown on belly; tail-feathers all broadly barred brown, outer feathers with tips and distal part of outer webs pale buff, central pair only a little longer than rest and not finely pointed; primaries as adult but browner with less grey and tips (except of outermost) with irregular surrounding lines and frecklings of buff and brown; secondaries browner on outer webs than in adult and innermost with alternating brown and buff surrounding lines instead of bars; primary-coverts with brown irregular bars and frecklings at tips; outer webs of greater coverts sand-buff not purple-brown as adult; rest of wing-coverts with black-brown horse-shoe shaped bars instead of spots as adult. Basal, plumulous portion of all body-feathers pale buff.

First winter. Male.—Like adult male but frequently several juvenile outer primaries and primary-coverts are retained, otherwise juvenile plumage is completely (including wings and tail) moulted.

Female.—Like adult female. Moults as in male.

Measurements and structure.—♂ wing 230–265 mm., tail: central pair 170–215, outermost 58–78, tarsus 20–24, bill from feathers 9–11 (12 measured). ♀ wing 215–235, tail: central 125–160. Primaries: 1st minute and hidden, 2nd longest, 3rd 30–50 mm. shorter, 4th 45–65 shorter, 5th 50–85 shorter, 6th 65–95 shorter; 2nd with much elongated, fine pointed tip (longest in adult male), rest with pointed tips. Outer secondaries very short, innermost as long as 8th or 9th primary, tips sharply rounded. Tail graduated, 16 feathers (one with 18), central pair extremely elongated with finely pointed tips (longest in adult male), rest much shorter and graduated, tips finely pointed in inner feathers,



Foot of Pallas's Sand-Grouse
(*Syrhaptes paradoxus*).

becoming broader in outer; in juvenile central pair not greatly elongated nor finely pointed. Upper and under tail-coverts long and pointed. Tarsus and toes feathered to claws, 3 toes, very short and joined together to base of claws forming a flat sole. Bill short, compressed and rather strong, basal part feathered to front of slit-like nostrils.

Soft parts.—Bill ashy-blue; claws black; iris dark brown.

CHARACTERS.—No subspecies. Feathered toes, distinctive colouring and elongated outer primary and central tail-feathers easily distinguish it.

BREEDING-HABITS.—Breeds in great numbers in western central

Asia in hollows on sandy desert, making no nest beyond a mere scratching. Eggs in Scotland in 1888 are said to have been laid in slight hollows on bare ground, under a tuft of heather. *Eggs*.—Usually 3, sometimes 2 only and 4 on record, elongated and elliptical in form, stone-buff or creamy-white to light brown in ground and spotted and blotched with yellowish-brown and ashy shell-marks. Average of 100 eggs, 42.1×29.6 . Max. : 46.5×29.9 and 42.5×32.4 . Min. : 39.2×28.5 and 40.3×27 mm. *Breeding-season*.—From end March through April to May in Turkestan. *Incubation*.—Probably by both sexes as male has incubation spots. Period (noted in confinement) 22, 23, 24, 27, and 28 days. Probably single brooded.

Food.—In Gobi Desert feeds on seeds of *Agriophyllum gobicum* ; also young shoots of *Salicorniæ* and seeds of *Salsola* recorded. In British Isles seeds of many grasses and weeds recorded, including *Capsella*, *Brassica*, *Sinapis*, *Raphanus*, *Sagina*, *Stellaria*, *Ulex*, *Genista*, *Cytisus*, *Ononis*, *Medicago*, *Trifolium*, *Lotus*, *Plantago*, *Chenopodium*, *Polygonum*, *Rumex*, *Poa*, *Ornithopus*, *Silene*, *Suaeda*, *Convolvulus*, *Urtica*, *Geranium*, as well as wheat, rye, and barley picked up on stubbles.

DISTRIBUTION.—*British Isles*.—Irregular visitor. Greatest invasions, May, 1863 and 1888, arriving along whole east coast Great Britain and spreading over greater part British Isles, reaching even north-west Ireland and O. Hebrides. Two clutches of eggs found near Beverley (Yorks.) June and July, 1888, and young birds at mouth of Findhorn, Culbin Sands (Elgin), June 1888 and Aug. 1889. Considerable invasion May 1908, recorded Yorks., Norfolk, Essex, Kent, Surrey, Berks., Herts., Hants., Cheshire. Other occurrences are : 1859, Norfolk, Kent, Carnarvon ; 1872, Ayr ; 1876, Yorks., Norfolk, Kildare ; 1890, Yorks., Lincs., Norfolk, Suffolk ; 1891, Yorks., north Scotland ; 1899, Yorks., Lincs., and possibly Holy Island ; 1904, Yorks. ; 1906, Yorks., Norfolk, and possibly East Lothian ; 1909, Yorks.

DISTRIBUTION.—*Abroad*.—Breeds from Khirgiz Steppes and recently Ufa Government in south-east Russia to Mongolia and southern Transcaspiæ, Koko-nor and Tsaidam. At irregular intervals migrations take place, westward throughout central Europe as far west as France and Spain, and south to Italy, north to Norway and Archangel, in east irregular to province of Pechili in China. Noticed in Europe for first time in 1848 near Sarepta (south Russia) and 1859 in west Europe.

ORDER LIMICOLÆ.

A large order containing all the "Waders," i.e. all the Stone-Curlews, Coursers, Pratincoles, Plovers, Sandpipers, Curlews, Snipe, Oyster-Catchers and allies, as well as the very specialized south American *Thinocoridæ*, the *Chionididæ* from the Southern Seas, and the tropical *Parridæ*. The *Limicolæ* differ a great deal in outward appearance and anatomically. Following characters seem

to be present in all : Schizognathous ; holorhinal, but see *Burhinus*. Cervical vertebræ 15 or 16. Sternum with spina externa but no interna. Hallux (if present) connected with the flexor longus hallucis, not with the perforans digitorum. Oil-gland tufted. Aftershaft present, though sometimes very small. Pullus nidifugous, covered with often beautifully marked and coloured down. Eggs spotted, except in *Dromas*. Division into families is somewhat unsatisfactory, but I cannot endorse the popular recognition of "*Charadriidæ*" and "*Scolopacidæ*" and can only recognize at present three in Europe.

Key to families of Order LIMICOLÆ.

- | | | | | |
|---|---|---|---|--------------------|
| 1 | { | Nostrils typically schizorhinal, cervical vertebræ 15 | 2 | |
| | | Nostrils not typically schizorhinal, cervical vertebræ 16 | . | <i>Burhinidæ</i> |
| 2 | { | Basi-ptyergoid processes absent | . | <i>Cursoriidæ</i> |
| | | Basi-ptyergoid processes present | . | <i>Charadriidæ</i> |

FAMILY BURHINIDÆ.

Contains the Stone-Curlew and tropical allies, mostly with longer legs. Nostrils not typically schizorhinal, generally described as holorhinal, but more correctly pseudo-holorhinal, longitudinal, in about middle of bill. No basi-ptyergoid processes. Tarsi in front and behind with hexagonal scutes, no hind toe. Eyes very large. Habits more or less crepuscular or nocturnal. About 15 species and various subspecies, in 2 or 3 genera. In Europe only one.

Genus BURHINUS Ill.

BURHINUS Illiger, *Prodromus Mamm. et Av.*, p. 250 (1811—Monotype, "*Charadrius magnirostris* Lath. Suppl.'").

Bill a little shorter than head, tail with 12, rarely 14, rectrices, much rounded to cuneiform. Wings long and pointed, 1st and 2nd or 2nd and 3rd developed primaries nearly equal and longest, inner secondaries nearly or quite as long as primaries. Sexes alike. About 7 species and several subspecies in Europe, Africa, Asia to Australia and Middle and South America. Only 1 in British Isles.

 NOTE.—The whole of the DESCRIPTIONS and paragraphs on CHARACTERS in all species of the Waders (Order LIMICOLÆ) are by Miss A. C. Jackson (now Mrs. R. Meinertzhagen).

BURHINUS CÆDICNEMUS

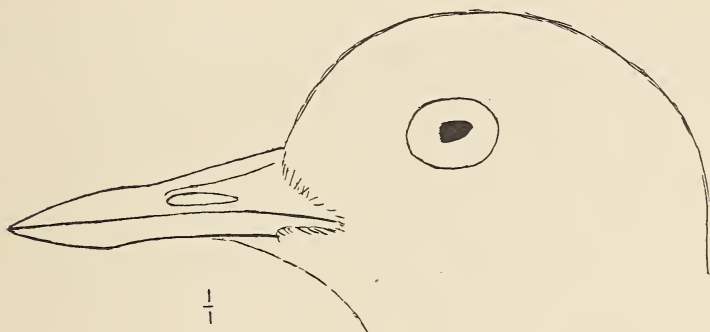
366. *Burhinus cædicnemus cædicnemus* (L.) — THE STONE-CURLEW.

CHARADRIUS CÆDICNEMUS Linnæus, *Syst. Nat.*, ed. x, i, p. 151 (1758—England).

Cædicnemus scolopax (S. G. Gmelin), *Yarrell*, III, p. 225 ; *Saunders*, p. 529.

DESCRIPTION.—*Adult male and female. Winter.*—Crown warm buff, heavily streaked black-brown or sepia ; nape same but streaks narrower ; mantle black-brown, edges of feathers lighter and

fringed warm buff; scapulars sepia, paler towards light or warm buff edges; back and rump pale greyish-brown with black-brown mesial streaks and warm buff edges; upper tail-coverts as rump but with irregular shadings and markings of brown; indistinct eye-stripe light buff, slightly streaked sepia; below eye sepia streak extending to ear-coverts; lores and cheeks light buff or white; warm buff moustachial line streaked sepia from base of lower mandible to nape; ear-coverts and sides of neck warm buff, narrowly streaked sepia; chin and throat white; lower-throat and breast light or warm buff with mesial sepia streaks of varying width; flanks same but streaks narrower; belly and vent white; under tail-coverts cinnamon sometimes with mesial sepia streaks and markings; axillaries white with sepia shaft-streaks; under wing-coverts white, those covering primaries with broad black-brown tips; tail-feathers: central pair sometimes dark ash-brown



The Stone-Curlew (*Burhinus x. edicnemus*).

tipped black-brown with a pale subterminal bar, preceded by an ill-defined band of black-brown, sometimes pale ash-brown with irregular markings and barrings of black-brown or sepia, remaining feathers dark or pale ash-brown broadly tipped black, with irregular black-brown markings and barrings and with subterminal white band, outer feathers mostly white with long black tips, (markings and coloration of tail-feathers vary considerably individually); primaries black, inner webs edged white basally, 2nd and 3rd with broad white patches across middle of web, 8th to 10th with bases and tips white; secondaries black, inner webs paler and white at base, innermost secondaries sepia edged cream or buff and with dark brown shafts; primary-coverts black-brown; greater coverts dark ash-brown shading to greyish-white or white towards tips, shafts and tips of outer, sometimes of both webs, black or black-brown forming narrow wing-bar; median coverts: lower series pale grey narrowly edged buff with black-brown shaft-lines clouded towards centre with black-brown, basal halves white, upper series with white basal halves uncovered and distal halves usually black-

brown tipped grey or buff forming irregular wing-bars, shafts black-brown ; lesser coverts black or dark sepia, fringed tawny. This plumage is acquired by complete moult Aug. to Nov. exceptionally Jan. *Summer*.—The body-feathers (not all scapulars), tail-feathers, innermost secondaries and coverts, some median and lesser coverts, are moulted March to May, but not rest of wings. Coloration as winter.

Nestling (Plate 8).—Down on upper-parts sandy, with irregular black-brown lines from eye to eye across fore-head and down centre of crown ; black line from behind eye down nape and mantle where it widens considerably ; black line across wing, another from side of back to uropygial tuft ; another from base of lower mandible almost joining line which passes down nape ; chin light buff ; breast light buff or sandy ; remaining under-parts light buff or buffish-white. N.B.—Black lines vary considerably individually and are sometimes more or less obsolete.

Juvenile.—Upper-parts as adult but paler, being sepia, feathers narrowly margined light or warm buff ; streaks on head and neck narrower ; back and rump as adult but streaks paler ; upper tail-coverts as adult but central ones marked with obsolete bars ; under-parts as adult but lower-throat and breast with narrower mesial sepia streaks than in some adults ; tail as adult, but ground-colour browner and more broken up with pale buffish obsolete bars, outer feathers barred dark brown and white, in some washed buff, with broad black tips ; wing-feathers as adult, but greater coverts ash or fawn-brown, edged at tip, and sometimes notched, light buff or white, more or less shaded sepia towards tip or with a subterminal sepia bar (greater coverts of adult are not broadly edged white at tip) ; median coverts sepia edged light buff at sides and with greyish-white bases, upper series greyish-white or light buff forming indistinct wing-bar, with oval sepia marking towards light buff tip ; lesser coverts as adult.

First winter.—Apparently as adult winter and only to be distinguished by retained juvenile wing-coverts. The body-feathers, some tail-feathers, some greater, median and lesser coverts are moulted from Sept. onwards but not rest of wings. *First summer*.—(Not examined.)

Measurements and structure.—♂ wing 230–252 mm., tail 113–133.5, tarsus 69–83, bill from feathers 34.5–40 (9 measured). ♀ wing 228–253.5, bill 33–40 (12 measured). Primaries : 1st minute, 3rd longest, 2nd slightly shorter or equal, 4th 5–9 mm. shorter, 5th 18–24.5 shorter, 6th 36.5–42 shorter. Longest inner secondary between 3rd and 6th primaries. Tail graduated and moderately long. Bill stout, short, straight, broad at base, tapering to a point which is slightly decurved. Nasal sinus large and filled up with a bare membrane. Three toes, outer and middle ones webbed to about first joint, inner and middle ones slightly webbed.

Soft parts.—Bill, tip black, base yellow ; legs and feet dull sulphur-yellow ; iris clear amber.

CHARACTERS AND ALLIED FORMS.—*B. æ. distinctus* (Grand Canary, Tenerife and Hierro) has upper-parts darker, under-parts usually purer white and markings consequently bolder; *B. æ. insularum* (E. Canaries) has upper-parts more sandy-rufescent than in *B. æ. ædicnemus* (though not nearly so sandy as in *saharæ*), breast more heavily streaked and is smaller; *B. æ. saharæ* (North Africa) has upper-parts lighter than in *B. æ. ædicnemus*, yellowish sand-colour, and black-brown streaks narrower; *B. æ. astutus* (Transcaspia to Baluchistan) is paler, less sandy-yellow and greyer than *saharæ*, mesial streaks narrower on upper-parts and smaller on breast; *B. æ. indicus* (India, Ceylon, Burmah) is like *ædicnemus* but smaller. Buff and black-brown upper-parts and short stout bill distinguish Stone-Curlew from other British Waders.

FIELD-CHARACTERS.—Gregarious in spring and autumn, lives during summer in scattered pairs on dry heaths, sandy wastes, chalk uplands, and, in one district, on pebble beaches. Owing to its elusive habits, generally protective coloration and comparative silence in daytime often escapes notice. When seen, however, its appearance is unmistakable, a large bullet-headed Plover with prominent yellow eyes, running quickly with short pattering steps, head lowered and neck retracted, or flying swiftly just above ground with long yellow legs outstretched, a dark band across terminal third of wings and white conspicuous in wings and tail. Vociferous after dark, when the penetrating, sweet “cur-lwee” of several birds sometimes combines in a loud wailing. A plaintive “klee” expresses alarm when chicks are in danger.

BREEDING-HABITS.—Haunts open country, downs, sandy flats, heaths, etc. *Nest*.—A mere scratching, often containing rabbit-droppings as well as eggs. *Eggs*.—Normally 2, but 3 occasionally recorded; 4 probably laid by two hens, colour light yellowish-stone to pale brown, irregularly blotched, spotted or closely streaked with sepia-brown and a few ashy shellmarks. Average of 100 eggs, 53.5×38.4 . Max.: 61.7×38.5 and 55×41.5 . Min.: 47×37.3 and 53.5×35.6 mm. *Breeding-season*.—Exceptionally from mid-April onward, but usually in May. *Incubation*.—Both sexes take part. Period 26–27 days. Single brooded.

FOOD.—Main food land-mollusca (snails and slugs), earthworms and insects, especially larger coleoptera, such as *Geotrupes*, *Melolontha*, etc.; also larvæ of lepidoptera, diptera, and orthoptera (grasshoppers, earwigs). Frogs occasionally picked up and not infrequently field-mice, while there are one or two instances of chicks of game-birds (Pheasant and Partridge) being swallowed. Small shoots of heather once recorded.

DISTRIBUTION.—*England*.—Summer-resident (3rd week March–Oct.), some winter Devon and Cornwall, and occasional elsewhere. Breeds Yorks. (now two localities only, York moors and wolds), Lincs., Norfolk, Suffolk, Essex (one locality), Kent, Sussex, Surrey, Hants., Dorset, Wilts., Berks., Bucks., Herts. (not Beds. since

1890) and Cambs. Elsewhere vagrant. Very rare Wales and north. *Scotland and Ireland*.—Rare vagrant. Three Scotland—St. Andrews (Fife), Jan., 1858, Muirhouse (Stirling), Aug., 1897, Fair Isle (Shetlands), June, 1913. Eleven Ireland, autumn to March. Clare, Cork, Waterford, Wexford, Dublin (5), Antrim and one without data.

DISTRIBUTION.—*Abroad*.—Central and south Europe, east at least to the Ural and Caspian. Partially migratory, wintering in north-eastern Africa south to E. Africa, and Mediterranean countries. Casual Madeira, Azores, Canary Islands. Replaced by allied races on Canary Islands, in northern Africa and Asia.

FAMILY CURSORIIDÆ.

Embracing the Coursers and Pratincoles and their allies. European species at least schizorhine. Nostrils oblong, with membrane. Culmen more or less curved. No basi-ptyergoid processes. 15 cervical vertebræ. Tarsus in front and behind with transverse scales or scutes. According to views generally 5 or 6 genera. 25 species Africa, Asia, a few forms ranging to south-east Europe and Australia.

Key to genera of Family CURSORIIDÆ.

Bill about as long as head, curved, hind toe absent	<i>Cursorius</i>
Bill much shorter than head, culmen curved, hind toe present	<i>Glareola</i>

Genus CURSORIUS Lath.

CURSORIUS Latham, Ind. Orn., II, p. 751 (1790—Type by subsequent designation of Gray, 1840, *C. europæus=gallicus*).

Bill about as long as head and curved. Nostrils clearly free from feathers. No hind toe, middle toe much longer than other two, its claw widened and pectinated on inner edge. Tarsus long and thin, milky-white as are toes, scutellated behind and in front. Wings pointed, inner secondaries not reaching tip of wing. 1st or 1st and 2nd developed primaries longest. Tail short, very little rounded. Five species and several subspecies in Africa and western parts of Asia, in Europe one species irregular and casual straggler.

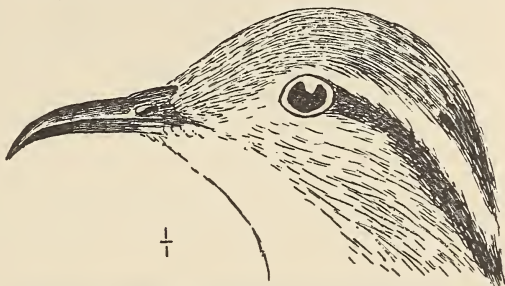
CURSORIUS GALLICUS

367. *Cursorius gallicus gallicus* (Gm.)—THE CREAM-COLOURED COURSER.

CHARADRIUS GALLICUS Gmelin, Syst. Nat., I, ii, p. 692 (1789—France).
Cursorius gallicus (Gmelin), Yarrell, III, p. 238; Saunders, p. 533.

DESCRIPTION.—*Adult male and female.* *Winter.*—Fore-part of crown isabelline; hinder-part and nape deep gull-grey, concealing a black patch on nape; broad white superciliary lines extend to nape, under them from back of eye to nape black lines; rest of

nape, mantle, scapulars, back, rump and upper tail-coverts isabelline; ear-coverts and cheeks pale isabelline-buff; lores, chin and throat buffish-white; breast, flanks and belly light buff or pale isabelline-buff, shading to white on vent; under tail-coverts light buff or buffish-white; axillaries and under wing-coverts black; tail-feathers isabelline, central pair occasionally with a small irregular brown sub-terminal marking, remainder tipped white and subterminally banded black; primaries black, sometimes inner ones narrowly edged light buff or white; secondaries with outer webs isabelline, inner webs black and tipped white, inner feathers with inner webs more or less white or pale



The Cream-coloured Courser (*Cursorius g. gallicus*). Adult.

drab with an irregular brown or brown-black marking towards tip, innermost isabelline; primary-coverts black; rest of wing-coverts isabelline. This plumage is acquired by complete moult March to Nov. *Summer*.—The body-feathers, some scapulars, occasionally tail-feathers, sometimes some innermost secondaries and coverts and apparently sometimes some median and lesser coverts are moulted Dec. to March but not rest of wings. Coloration as winter.

Nestling.—Down on crown sandy-rufous and white with an irregular streak of dusky-brown; nape buffish-white; remaining upper-parts marbled sandy-rufous and white; chin and throat white; breast pale isabelline, remaining under-parts white.

Juvenile.—Crown, nape, mantle, scapulars, back and rump isabelline-buff, feathers with irregular wavy sepia markings; upper tail-coverts same but with faint sepia markings; eye-stripe light buff, some feathers spotted sepia; below eye-stripe, from eye to nape a black-brown line, more pronounced in some than in others, feathers tipped buff; ear-coverts and cheeks buffish-white, some feathers of cheeks spotted sepia; moustachial streak creamy-buff, feathers tipped sepia; chin and throat white or light buff; upper-breast as adult but some feathers with irregular V-shaped sepia markings at tip; remaining under-parts as adult; tail-feathers as adult but central pair sometimes with two or three irregular wavy bars of sepia; wing as adult but primaries broadly tipped buff and innermost secondaries as mantle; rest of wing-coverts isabelline-buff with irregular V-shaped subterminal sepia markings and edged buff, sometimes sepia markings on greater coverts ill-defined or absent.

First winter.—As adult but distinguished by retained juvenile

wing-coverts, by broad buff tips to primaries and by juvenile feathers of back and rump when not moulted. The juvenile body-plumage (not all scapulars and sometimes not feathers of back and rump), exceptionally two central pair of tail-feathers, some innermost secondaries and apparently their coverts, most median and some lesser covert are moulted May to Nov., but apparently not usually rest of wings or tail-feathers, occasionally many juvenile feathers are retained.* *First summer*.—The body-feathers (not all scapulars nor all feathers of back and rump), sometimes central pair of tail-feathers, some innermost secondaries and apparently their coverts and some median and lesser coverts are moulted Dec. to March, but not rest of wings or tail-feathers. Coloration as adult and only to be distinguished by retained juvenile feathers.

Measurements and structure.—♂ wing 151–169 mm., tail 51–63, tarsus 49–60, bill from feathers 21–25 (12 measured). ♀ wing 152–170, bill 20–25. Primaries: 1st minute, 2nd longest, 3rd equal or 2–5.5 mm. shorter, 4th 6–11 shorter, 5th 10–18 shorter, 6th 18–27.5 shorter. Longest inner secondary between 5th and 7th primaries. Tail slightly rounded. Bill short, slender, tapering and decurved. Tarsus long, slender, compressed anteriorly, scutellated. Three toes (hind toe absent), outer and middle ones webbed at base, claw of middle toe pectinated on inner side.

Soft parts.—Bill blackish horn-grey, lower more blue-grey, tip darker; legs and feet milk-white, claws horn-grey; iris deep brown.

CHARACTERS AND ALLIED FORMS.—*C. g. bogolubovi* (S. Transcaspia, N.E. and E. Persia) differs from *C. g. gallicus* in having breast paler and with greyish tinge; *C. g. exsul* (Cape Verde Is.) has sides of head and breast deeper isabelline-buff. Various other subspecies, some of which require confirmation, have been described from N.E. and E. Africa and Dahlak Is. Black axillaries and underwing coverts distinguish *C. g. gallicus* from other species of Coursers, and isabelline coloration from allied waders.

BREEDING-HABITS.—A desert haunting species, breeding in sandy and bare places. No nest, eggs being laid in a scrape. *Eggs*.—2, stone-buff, closely marked and streaked all over with markings of brown and grey shellmarks. Average of 100 eggs, 34.6×26.6 . Max.: 38.6×28.4 and 35.3×29.1 . Min.: 31.2×25.1 and 33.5×24.7 mm. *Breeding-season*.—Feb. and March in Canaries but in N.W. Africa in April, May and June, and in Palestine even into July. *Incubation*.—Said to be performed by female, but this needs confirmation. Period unknown. Possibly more than one brood.

FOOD.—Insects and their larvæ; also in their natural haunts, small lizards and land-mollusca (snails). Insects include coleoptera, orthoptera (grasshoppers), diptera, and larvæ of lepidoptera.

* It appears that sometimes the remiges and their coverts are also moulted at this or the pre-nuptial moult though in the birds examined they were not actually found in quill; new remiges like those of adult.—A.C.M.

DISTRIBUTION.—*Great Britain.*—Rare vagrant. About twenty-three England, two Wales, one Scotland. Chiefly Oct. to Dec., but one Sept., and a pair Feb., Kent, and a pair May, Sussex. Has been recorded Northumberland, Yorks., Lincs., Norfolk, Suffolk, Kent, Middlesex, Hants., Wilts., Dorset, Devon, Cornwall, Somerset, Leicester, Cumberland, Cardigan, “North Wales” and Lanark.

DISTRIBUTION.—*Abroad.*—Deserts of north Africa, occasionally met with in south Europe, and as far north as Heligoland, Germany, Hungary, Denmark, Finland, Holland, Belgium, and France. Exact eastern limit uncertain. Replaced by allied races in Transcaspiæ and Persia, Cape Verde and Canary Islands, and north-eastern Africa.

Genus GLAREOLA Briss.

GLAREOLA Brisson, Orn., I, p. 48 (1760—Type according to v, p. 141, “*Glareola*” = *Hirundo pratincola* L.).

Bill much shorter than head, culmen curved. Nostrils just in front of feathering. Wings very long and pointed, tip of secondaries far behind tip of primaries, 1st developed primary longest. Tail longer than in *Cursorius*, more or less forked. Legs short, in front and behind scutellated. Middle toe longest, inner side of claw pectinated. Hind toe well developed. About 9 species admitted, 2 in south Europe.

GLAREOLA PRATINCOLA

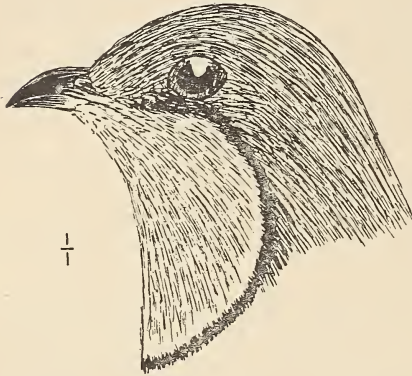
368. *Glareola pratincola pratincola* (L.)—THE PRATINCOLE.

HIRUNDO PRATINCOLA Linnæus, Syst. Nat., ed. XII, i, p. 345 (1766—S. Europe and Austria).

Glareola pratincola (Linnæus), Yarrell, III, p. 231; Saunders, p. 531.

DESCRIPTION.—*Adult male. Winter.*—Upper-parts (except tail-coverts) and sides of neck olive-brown; feathers of crown, nape and sides of neck tipped and edged tawny; upper tail-coverts white; an indistinct warm buff line extends from front of eye almost to opening of nares; lores warm buff; a small black patch in front of eye, passing beneath eye and continuous with a semi-circle of pronounced sepia or black-brown streaks encircling throat; fore-part of cheeks, chin and throat light or warm buff, feathers more or less spotted or streaked sepia or black-brown; breast fawn faintly tinged buff, feathers narrowly edged tawny; lower-breast buff; flanks, belly, vent and under tail-coverts white; axillaries bay; under wing-coverts bay and black (amount of bay varies individually); tail-feathers olive-brown shaded black, all except central pair with deep white bases (sometimes central pair white towards base) increasing in extent on outer pairs; primaries and their coverts black or black-brown, paler on inner webs, with a dull violet-purple sheen, inner webs of inner ones pale olive-brown, 2nd with a white shaft, remainder with brown shafts; secondaries deep

olive-brown, with white tips, broader on inner ones, innermost as mantle; rest of wing-coverts olive-brown. This plumage is acquired by complete moult July to Dec. *Summer*.—The body-feathers (not all scapulars, nor all tail-coverts), occasionally tail-feathers, some innermost secondaries and coverts, some median



The Pratincole (*Glareola p. pratincola*). Adult, summer.

and lesser coverts, but not rest of wings* are moulted Dec. to June. Coloration as winter but feathers of crown, nape, sides of neck and breast without tawny edges; chin and throat light buff deepening to warm buff at sides without sepia streaks; a well-defined black line (faintly edged white), extends from anterior corner of eye and encircles throat; lores black; a very narrow black line (absent in winter) extends from lores along upper mandible almost to external opening of nares.

Adult female. Winter.—As male but apparently buff line towards nares absent. *Summer*.—As male but lores olive-brown and black line along upper mandible to nares absent.

Nestling.—(Not examined.)

Juvenile.—Upper-parts, except tail-coverts, olive-brown, feathers shaded centrally or subterminally with sepia or black-brown and tipped and notched cream or light buff; upper tail-coverts as adult; from front of eye to opening of nares a warm buff streak, some feathers spotted sepia; immediately in front of and passing below eye a black-brown or sepia line, continuous with a series of more or less pronounced sepia or black-brown streaks encircling throat; chin and throat as adult but streaks narrower and sometimes absent; upper-breast fawn or pale olive-brown, feathers with black-brown or sepia marks towards tip and edged white or buff, rest of breast warm or light buff; remaining under-parts as adult; tail-feathers darker olive-brown than in adult and usually with subterminal black-brown markings and edged light buff, olive-brown tips not so extensive as in adult, white bases proportionately greater (two outer pairs shorter and broader than in adult, with rounded tips and only slightly emarginated on inner webs); primaries as adult but tipped buff; white tips to secondaries sometimes suffused buff; greater, median and lesser coverts olive-brown with a subterminal bar of sepia or black-brown and edged cream or light buff.

* One April bird examined was moulting the primaries, another (May) had half the secondaries new, but these were probably exceptional.—A.C.M.

First winter. Male and female.—As adults and only to be distinguished when one or two juvenile wing-coverts are retained. The juvenile body-plumage, tail-feathers, wing-quills and wing-coverts are moulted Aug. to Nov. but sometimes juvenile wing-coverts are retained.

Measurements and structure.—♂ wing 186.5–201 mm., tail 107–120, tarsus 30–32, bill from feathers 13–16 (12 measured). ♀ wing 184–204, bill 12.5–14. Primaries: 1st minute, 2nd longest, 3rd 4.5–13 mm. shorter, 4th 18.5–27 shorter, 5th 34–44 shorter, 6th 46–58 shorter. Longest inner secondary between 6th and 8th primaries. Tail deeply forked, outermost pair exceeding central pair by about 50–60 mm. in ad. ♂ and 30 in juv. Bill short, broad at base, tapering to a point, decurved, nasal groove wide and feathered. Four toes, middle and outer ones webbed at base almost up to first joint; claw of middle toe pectinated on inner side.

Soft parts.—Bill black, red at base; legs and feet black; iris hazel.

CHARACTERS AND ALLIED FORMS.—*G. p. limbata* (Senegal to Nubia, N. Somaliland and S. Arabia) has upper-parts darker brown, throat browner, inner under wing-coverts and axillaries darker red-brown; *G. p. fülleborni* (Uganda and E. Africa) has characters of *limbata* still more pronounced (Hartert). Bay axillaries and deeply forked tail distinguish *G. p. pratincola* from all other British Waders.

FIELD-CHARACTERS.—Flight swift and powerful. At a little distance has appearance of a large, somewhat bulky Swallow. Very demonstrative, noisy and unmistakable at nesting-places, flying close to intruder and frequently settling on ground within a few yards, often lying on its side or crouching with wings full spread and resting on ground. (H.F.W.)

BREEDING-HABITS.—Haunts mud-flats of estuaries, such as marismas of south Spain, and in wet years nests on islets in shallow water or on barren flats in small or medium-sized colonies. *Nest.*—Practically none; eggs sometimes laid in hoof print in mud, in scrape or shingle, or among low salt vegetation. *Eggs.*—2 or 3 normally, 4 occasionally, greyish or buff and thickly marbled and spotted all over with black-brown, and grey shellmarks. Average of 100 eggs, 32.4×24 . Max.: 35.6×24.3 and 33×26.2 . Min.: 27.9×22.2 mm. *Breeding-season.*—Early May onward in S. Spain and Greece, and apparently in June in Palestine. No reliable information as to incubation. Single brooded.

FOOD.—Insects, including orthoptera (crickets, mole cricket, grasshoppers and locusts), odonata and Phryganeidæ, coleoptera (*Melolontha*, *Geotrupes*, *Copris*, *Aphodius*, *Hister*, *Carabus*, *Harpalus*, *Cicindela*, *Silphidæ*, *Staphylinidæ*, etc.).

DISTRIBUTION.—*British Isles*.—Rare vagrant. Over twenty England, one Wales, three Scotland, one doubtful Ireland. Has been recorded Cornwall, Devon, Somerset, Dorset, Wilts., Hants. (two or three), Surrey, Kent (three), Essex, Norfolk (four), Cambs., Lincs., Yorks. (three), Lancs., Cumberland, Brecon (one seen), Unst (Shetlands), Montrose (Forfar), Flannan Isles (O. Hebrides). One supposed Cork prior to 1844.

DISTRIBUTION.—*Abroad*.—South Europe and north Africa, eastwards to Palestine, Black and Caspian Seas, to Turkestan and Sind; northwards (in Europe) to the Camargue in south France and Hungary. Stragglers have occurred in Austria, Poland, Germany, Denmark, Holland, and Belgium. Northern birds are migratory and seem to winter in north Africa. Accidental Madeira and Canaries. Replaced by allied races in tropical and south Africa.

GLAREOLA NORDMANNI

369. *Glareola nordmanni* Nordm. — THE BLACK-WINGED PRATINCOLE.

GLAREOLA NORDMANNI "Fischer," Nordmann, Bull. Soc. Imp. Nat. Moscou, xv, p. 314, pl. 2 (1842—Steppes of south Russia).

Glareola melanoptera Nordmann, N. F. Ticehurst, Bull. B.O.C., xiii, p. 78; Saunders, Brit. B., i, p. 15.

DESCRIPTION.—*Adult male and female*. *Winter*.—Coloration as in *G. p. pratincola* but nape, ear-coverts and sides of neck cinnamon-brown, feathers of crown, nape, ear-coverts, cheeks and sides of neck edged buff, those of mantle and scapulars faintly edged buff; axillaries and under wing-coverts black; secondaries black with a dull green gloss and with no white tips; innermost secondaries as mantle. This plumage is acquired by complete moult from autumn to Dec. *Summer*. *Male*.—The body-feathers (not all tail-coverts), sometimes tail-feathers, some innermost secondaries and coverts, some median and lesser coverts but not rest of wings are moulted in spring. Coloration as winter but feathers of crown, nape, ear-coverts, cheeks and sides of neck without buff edges; chin and throat light buff deepening to warm buff at sides and without black-brown streaks as winter (chin sometimes white), in front of eye a small black patch from which a black line encircling throat as in *G. p. pratincola*, a black line (broader than in *G. p. pratincola*) from anterior corner of eye across lores to opening of nares. *Female*.—As male but black line from anterior border of eye extends only a little way beyond angle of mouth.

Nestling.—(Not examined.)

Juvenile.—Coloration as *G. p. pratincola* but axillaries and under wing-coverts black, latter tipped chestnut; tail-feathers as in *G. p. pratincola*, two outer pairs much shorter, rounder and broader than in adult and not so sharply emarginated, secondaries

as adult but narrowly tipped light buff or cream not deep olive-brown tipped white or white washed buff as in *G. p. pratinctola*.

First winter. Male and female.—As adult and only to be distinguished if any juvenile wing-coverts are retained. Black patch in front of eye in male is apparently smaller than in adult, while in female it is ill-defined. The juvenile body-plumage, tail-feathers, wing-quills and wing-coverts are moulted Aug. to Jan. Sometimes some juvenile wing-coverts are retained.

Measurements and structure.—♂ wing 194–210 mm., tail 105.5–117, tarsus 33.5–36.5, bill from feathers 14.5–17.5 (6 measured). ♀ wing 184–197.5, bill from feathers 12–15 (5 measured). Other structure as in *G. p. pratinctola* but claws shorter and stronger.

Soft parts.—Bill black, base red; legs and feet black; iris dark brown.

CHARACTERS.—No subspecies. Black axillaries and deeply forked tail distinguish *G. nordmanni* from allied species.

BREEDING-HABITS.—Apparently resembles Common Pratincole closely in habits, breeding in colonies on mud or sandy-flats and making no nest. *Eggs.*—Also very similar, 2–3 and not infrequently 4, perhaps as a rule less heavily marked. Average of 35 eggs, 32.4×24.8 . Max. : 35.3×25.2 and 35×26 . Min. : 28×24.8 and 33.1×23.3 mm. *Breeding-season.*—Mostly in second half May. No reliable details of incubation. Single brooded.

FOOD.—Insects, very largely orthoptera (grasshoppers and locusts).

DISTRIBUTION.—*England.*—Eight. One Romney Marsh (Kent), May 30, 1903 (*ut supra*). One same place, June 17, and one Rye (Sussex), June 18, 1903 (Boyd Alexander, *Bull. B.O.C.*, xiv, p. 17). One near Northallerton (Yorks.) Aug. 17, 1909 (R. Fortune, *Nat.*, 1909, p. 372). One April 30, two May 1, one May 3, 1913, near Rye (Sussex), (H. W. Ford-Lindsay, *Brit. B.*, vii, p. 23).

DISTRIBUTION.—*Abroad.*—South Russian steppes and Dobrogea together with *G. pratinctola pratinctola*, north to west Siberia. Formerly in Hungary. Winters in west and south Africa. Casual Bulgaria, Italy, Sicily.

FAMILY CHARADRIIDÆ.

Nostrils typically schizorhine. Basi-ptyergoid processes present. Cervical vertebræ 15. Shape of bill, nostrils, feet, etc. very variable, from long slender bills of *Numenius* and *Limosa*, *Gallinago*, etc., to short, thick ones of *Charadrius*, etc. Eggs spotted. Mostly inhabitants of swampy ground, shores, moors and meadows. Northern species migratory, some over half globe. Not much under 100 species, number of genera admitted by various authors very different, often split up into such small genera from insignificant characters that study is thus greatly hampered.

Key to genera of Family CHARADRIIDÆ.

1	{ Bill laterally compressed, so as to be chisel- or knife-like in front	2	<i>Hæmatopus</i>
	{ Bill not laterally compressed, not knife-like at tip		
2	{ Bare part of tibia over 70, tarsus over 100 mm, pink		<i>Himantopus</i>
	{ Bare part of tibia less than 70, tarsus less than 100 and not pink	3	
3	{ Bill long, slender and strongly recurved	4	
	{ Bill over 50 mm. and strongly decurved		<i>Numenius</i>
	{ Bill neither slender and strongly recurved, nor strongly decurved, if decurved less than 50 mm.	5	
4	{ Tarsus under 120 mm.		<i>Terekia</i>
	{ Tarsus over 120 mm.		<i>Recurvirostra</i>
5	{ Tail with distal half or less uniform black with narrow white tip, basal half or more white, bill not longer than head	6	
	{ Tail barred, basal half not white, or if white either distal half barred or bill longer than head	7	
6	{ Head crested, abdomen white		<i>Vanellus</i>
	{ No crest on head, abdomen black and chestnut		<i>Chettusia</i>
7	{ Tibia entirely feathered		<i>Scolopax</i>
	{ Lower part of tibia bare	8	
8	{ Culmen appreciably longer than tarsus as well as tail	9	
	{ Culmen not distinctly longer than tarsus or tail	10	
9	{ Tail-feathers 14 or more		<i>Capella</i>
	{ Tail-feathers 12	11	
10	{ Wing longer than 180 mm.		<i>Limosa</i>
	{ Wing under 180 mm.		<i>Macrorhamphus</i>
11	{ Metallic green stripes on back		<i>Lymnocyptes</i>
	{ No metallic green stripes on back	12	
12	{ Toes laterally lobed		<i>Phalaropus</i>
	{ Toes not laterally lobed	13	
13	{ Inner web of outer primaries with small black spots		<i>Tryngites</i>
	{ Inner web of outer primaries uniform, barred or blotched but not with small black spots	14	
14	{ No hind toe	15	
	{ Hind toe present	16	
15	{ Tail straight or rounded, middle rectrices not clearly produced beyond the rest, bill thicker		<i>Charadrius</i>
	{ Tail with middle pair of rectrices pointed and produced beyond the rest, bill slenderer		<i>Crocethia</i>
16	{ Bill thick, height at base about equal to one-third of length of bill, hind toe minute		<i>Squatarola</i>
	{ Bill thinner, slenderer, height at base less than one-third of length of bill, hind toe well developed	17	
17	{ Bill comparatively short, conical, perfectly straight or slightly recurved		<i>Arenaria</i>
	{ Bill comparatively longer, slenderer, not in the least conical	18	
18	{ Tail as long as or longer than half the wing		<i>Bartramia</i>
	{ Tail less than half the length of the wing	19	
19	{ Culmen compressed, flattened, except at base, and slightly decurved, but rising again somewhat before the curved tip		<i>Limicola</i>
	{ Bill straight or slightly curved, not flattened	20	

- | | | |
|----|--|--|
| 20 | { Web between outer and middle toe reaching to middle of toes or nearly so
{ No web between outer and middle toes, or very small one, not nearly reaching to middle of toes 21 | <i>Ereunetes</i> |
| 21 | { Practically no web between outer and middle toe, bill more or less widening before tip, sharply defined against feathers and mostly slightly rugose just in front of frontal feathering
{ A small but distinct web between outer and middle toe, bill gradually tapering to tip, sharply defined against feathering, but not rugose just in front of latter
{ A very small web between outer and middle toe, bill straight and strong, very little tapering, short feathers encroaching on base of bill, but in ♂ in spring forehead, lores and sides of head bare and warty | <i>Calidris</i>

<i>Tringa</i>

<i>Philomachus</i> |

Genus HÆMATOPUS L.

HÆMATOPUS Linnæus, Syst. Nat., ed. x, i, p. 152 (1758—Monotype *H. ostralegus*).

At once recognizable by peculiar bill which is strongly laterally compressed, tip knife-like, longer than head, not pointed. Wing long and pointed. Tail short. Tarsus and toes short and thick, with hexagonal scales in front and behind. No hind toe. Toes connected basally by webs, skin of toes laterally a little extended. About 15 forms, can be grouped into two or three species. Only one European.

HÆMATOPUS OSTRALEGUS

370. *Hæmatopus ostralegus ostralegus* L.—THE OYSTER-CATCHER.

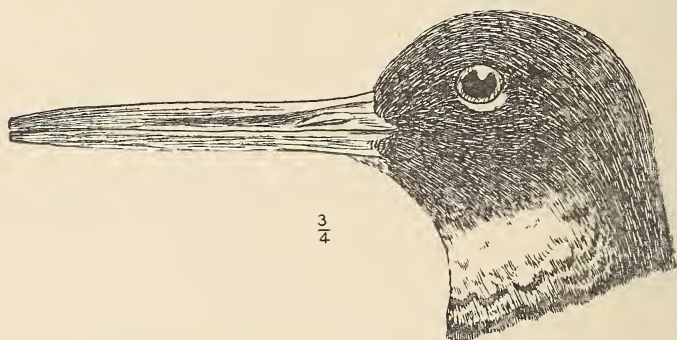
HÆMATOPUS OSTRALEGUS Linnæus, Syst. Nat., ed. x, i, p. 152 (1758—Europe and North America. Restricted typical locality: Oeland [island near Sweden].

Ostralegus Hæmatopus Macgillivray, Man. Brit. Orn., II, p. 59 (1842—New name for *Hæmatopus Ostralegus*).

Hæmatopus ostralegus Linnæus, Yarrell, III, p. 294; Saunders, p. 559.

DESCRIPTION.—*Adult male and female. Winter.*—Crown, nape, mantle and scapulars black glossed dull greenish; back, rump and upper tail-coverts white, two or three of latter often with black-brown tips and markings; small patch below eye white; ear-coverts, cheeks and sides of neck black; chin black more or less interspersed with white; across middle of throat broad white band continued as narrow band to sides of neck (many feathers tipped black in fresh plumage); rest of throat and upper-breast black; remaining under-parts white; tail-feathers black, basal halves white, outer feathers with more than half white and faintly tipped same; primaries black with proximal three-quarters of inner webs white (sometimes absent on 2nd), 3rd to 6th with oval white streak along shaft towards tip (absent often on 3rd and sometimes on 4th

and 5th and often continuous with white on inner web), remaining primaries with proximal three-quarters of outer webs white, sometimes separated from, sometimes continuous with white inner web (there is much individual variation in amount of white on primaries); secondaries black, some tipped white, basal halves white, inner feathers with more or less white on inner webs, those next innermost white, sometimes with oval black marks, innermost and their coverts as scapulars, one next white inner secondaries often tipped white and more or less white towards base of inner web; primary-coverts black, innermost tipped white; bastard-wing black; greater coverts white; median and lesser coverts as mantle, some median with narrow white fringes, lower ones broadly edged white. This plumage is acquired by complete moult July to Dec. *Summer*.—The body-feathers (not all scapulars), sometimes central pair and sometimes other tail-feathers, some innermost secondaries and



The Oyster-Catcher (*Hematopus o. ostralegus*). Adult, winter.

coverts, some median and lesser coverts are moulted Jan. to May but not rest of wings and apparently not rest of tail. Coloration as winter but chin and throat black, feathers of throat with white bases.

Nestling (Plate 8).—Down on crown dusky-black tipped greyish-white and buff and irregularly mottled black with an ill-defined black median streak extending on to nape; nape dusky-black tipped buff; mantle dusky-black tipped greyish-white and warm buff (latter colour predominating) and with two irregular black bands down centre of back; an irregular blackish line across wing, another extending from below wing to uropygial tuft; uropygial tuft black tipped warm buff; a black line from behind eye to nape; cheeks, sides of neck, chin and throat dusky-black faintly tipped light buff; remaining under-parts white; down on back of thighs dusky, tipped buff.

Juvenile. Male and female.—As adult summer but mantle and scapulars tinged brown and feathers mostly margined warm

buff; sometimes a few feathers of back and rump faintly tipped dusky; upper tail-coverts washed subterminally with buff and narrowly tipped black, sometimes with two or three dusky-black bars or markings; under-parts as adult summer but black chin sometimes intermixed with white, sometimes feathers of throat more or less white towards base, white bases only partially concealed forming an imperfect white throat-band; black feathers of upper-breast bordering lower-breast with buff edgings; tail as adult; wing as adult but innermost secondaries and coverts as scapulars; median and lesser coverts tinged brown and many median coverts edged warm or light buff some with a terminal dusky-black line. N.B.—Buff tips to feathers of upper-parts are more or less lost by abrasion and black tips to feathers of throat also become abraded and throat sometimes becomes more or less white as adult winter.

First winter.—As adult winter but always distinguished by some worn brown retained juvenile scapulars, worn juvenile tail-feathers and by juvenile innermost secondaries and median coverts with worn buff edges, also by one or two remaining juvenile upper tail-coverts; primaries, secondaries and their coverts browner. The juvenile body-plumage (not all scapulars), sometimes central pair of tail-feathers, usually some innermost secondaries and their coverts, usually some median and lesser coverts, are moulted Aug. to Dec. but apparently not rest of tail-feathers, nor wings. *First summer*.—Moult apparently as in adults possibly not so complete; very little material examined. Like adult, but can be distinguished by browner median and lesser coverts; tone of mantle and scapulars browner than in freshly moulted adults. In less forward birds breeding plumage is apparently not acquired.

Measurements and structure.—♂ wing 249–275.5 mm., tail 100.5–117, tarsus 44–52, bill from feathers 62–75 (12 measured). ♀ wing 236–265, bill 72–88.5. Primaries: 1st minute, 2nd longest, 3rd 4–9.5 mm. shorter, 4th 12–18 shorter, 5th 23–32 shorter, 6th 37–48 shorter; 3rd slightly emarginated outer web. Longest inner secondary between 5th and 7th primaries. Tail slightly rounded, middle and lateral feathers shorter than rest. Bill long, straight, stout and compressed laterally, slightly bent upwards. Nasal groove less than half length of bill. Three toes, outer and middle ones webbed almost up to 2nd joint, inner and middle toes slightly webbed, skin of toes extended laterally.

Soft parts.—Bill (ad. winter) orange-red, tip reddish-horn, (ad. summer) orange-red or vermilion to tip, tip sometimes reddish-yellow, (juv.) orange-yellow, tip brownish-horn, (1st winter) orange-red, tip blackish-horn; legs and feet (ad. winter) flesh-pink, (summer) coral-pink, (juv.) greyish-white, (1st winter) pale pink; iris (ad. winter and summer) vermilion, (juv.) brown, (1st winter) reddish-yellow.

CHARACTERS AND ALLIED FORMS.—*H. o. longipes* (W. Siberia, W.

Turkestan) has bill and tarsus longer, nasal groove more than half length of bill; *H. o. osculans* (E. Siberia to N. China, Japan, etc.) has bill longer and white on outer web of primaries commences on 6th. Other forms in Australia and New Zealand. Black and white plumage and straight, laterally compressed bill distinguish species from other British Waders.

FIELD-CHARACTERS.—Identified at once by boldly pied black and white plumage, long stout orange-red bill and flesh-pink feet. Frequents shingle-banks of rivers in north Britain, but is chiefly a bird of the seaside, resorting alike to rock-bound coasts, pebble-ridges, sandy shores and estuarine flats, where several hundreds sometimes pack together. Call-note a loud “klee-eeep klee-eeep.” Selous aptly describes love-song as “kee kee kee kee kee kervee kervee kervee kervee,” a loud ear-piercing clamour ending in a quavering trill. Alarm-note a shrill “pic pic pic.”

BREEDING-HABITS.—Haunts coasts and estuaries, sand-dunes and especially in Scotland, shingle-banks by sides of rivers and on shores of lochs far inland. No nest, but sometimes pieces of shell, or small stones arranged in nest-hollow, which may be in sand, on rock or in turf. *Eggs*.—Usually 3, sometimes 2 and occasionally 4, while 6 once recorded, yellowish-stone or clay-buff, blotched, spotted, and sometimes streaked with brown-black and ashy shell-marks. Average of 101 British eggs, 57.0×40.0 . Max.: 70.1×37.4 and 62.1×48.9 . Min.: 51.6×40.4 and 62.6×35 mm. *Breeding-season*.—Begins about April 25, but most eggs are laid in May. In north often not till June. *Incubation*.—Shared by sexes but chiefly by female. Period 21–24 days. Single brooded.

FOOD.—Chiefly marine mollusca, especially limpets; also frequently mussels, cockles, and periwinkles, occasionally small whelks; earthworms; crustacea (shrimps); and insects (coleoptera, diptera and larvæ, chiefly *Tipulidæ*, lepidoptera, especially larvæ of *Noctuæ*, etc.). Vegetable matter and seeds also recorded, as well as sand-worms and holothurians.

DISTRIBUTION.—*British Isles*.—Resident, passage-migrant and winter-visitor (mid-March–early May to Sept.–mid-Nov.). Breeds only very sparingly in few localities east coast England and on south coast, but fairly plentifully on coasts Wales and Lancs. northwards. In Scotland and Ireland plentiful and frequently breeds along rivers and inland lochs Scotland. General movement southward in autumn when with advent of migrants species becomes more numerous and more generally distributed.

DISTRIBUTION.—*Abroad*.—Europe generally. Wintering as far south as Mediterranean, north Africa, Red Sea, and north-west India. Casual Greenland, Madeira. Replaced by closely-allied forms in western and north-east Asia, and by others in Australia and New Zealand.

Genus CHARADRIUS L.

CHARADRIUS Linnæus, Syst. Nat., ed. x, i, p. 150 (1758—Type by tautonymy and subsequent designation *C. hiaticula*).

Small to medium "Plovers" without hind toe. Tarsus more or less longer than middle toe, reticulated. Bill strong, comparatively thick and short. Wings long and pointed, inner secondaries elongated but usually not reaching tip of primaries. Tail rounded or straight, middle pair of rectrices not elongated. About 3 dozen species in all parts of world.

Key to species of genus CHARADRIUS.

- | | | | |
|---|---|---|---------------------------------|
| 1 | { Upper-side with numerous yellow spots | 2 | |
| | { Upper-side without yellow spots | 3 | |
| 2 | { Axillaries white | | <i>C. apricarius</i> , p. 530 |
| | { Axillaries smoky grey-brown | | <i>C. dominicus</i> , p. 535 |
| 3 | { Rump and upper tail-coverts light rust-red | | <i>C. vociferus</i> , p. 528 |
| | { Rump and upper tail-coverts greyish or brown | 4 | |
| 4 | { Breast with narrow white or whitish band | | <i>C. morinellus</i> , p. 511 |
| | { No narrow white breast-band | 5 | |
| 5 | { Wide rufous or brownish-buff breast-band | | <i>C. asiaticus</i> , p. 515 |
| | { Black or dark brown complete, or widely interrupted, chest-band | 6 | |
| 6 | { Distinct web between toes | | <i>C. semipalmatus</i> , p. 520 |
| | { No distinct or very small web between toes | 7 | |
| 7 | { Outer two or three rectrices entirely white | | <i>C. alexandrinus</i> , p. 525 |
| | { One or no outer rectrices entirely white | 8 | |
| 8 | { Larger, bill stouter, white patches on inner primaries | | <i>C. hiaticula</i> , p. 516 |
| | { Smaller, bill slenderer, no white patches on inner primaries | | <i>C. dubius</i> , p. 522 |

CHARADRIUS MORINELLUS

371. *Charadrius morinellus* L.—THE DOTTEREL.

CHARADRIUS MORINELLUS Linnæus, Syst. Nat., ed. x, i, p. 150 (1758—Europe. Restricted typical locality : Sweden).

Charadrius Anglus P.L.S. Müller, Natursystem, Suppl., p. 117 (1776—England. Ex Brisson).

Eudromias morinellus (Linnæus), Yarrell, III, p. 246 ; Saunders, p. 535.

DESCRIPTION.—*Adult male and female. Winter.*—Crown dark sepia, feathers broadly edged pink-cinnamon ; buff-white superciliary stripe continued on to nape ; nape, mantle, scapulars, back and rump ash-brown, feathers edged pink-cinnamon ; upper tail-coverts ash-brown fringed warm buff ; ear-coverts ash-brown ; cheeks and sides of neck cream or pale pink-cinnamon, streaked sepia ; chin cream-white ; throat whitish streaked ash-brown, feathers margined warm buff ; breast and flanks ash-brown, feathers fringed warm buff ; an ill-defined narrow white band across breast ; belly and vent white ; under tail-coverts light buffish-

white or white ; axillaries and under wing-coverts pale grey ; tail-feathers ash-brown, tipped buff or white with a broad subterminal blackish band, three outer pairs broadly banded white at tip, outer pair with outer web bordered white ; primaries sepia, inner ones tipped buff-white, shaft of 2nd white, of remainder brown ; secondaries ash-brown tipped white, paler on inner webs and with ash-white bases, innermost secondaries as mantle ; primary-coverts ash-brown, inner ones faintly tipped light buff ; rest of wing-coverts ash - brown edged pink-cinnamon. This plumage is acquired by complete moult July to Nov.

Summer.—The body-feathers (not all scapulars), in some central pair of tail-feathers, some innermost secondaries and coverts, some median and lesser coverts are moulted March to June, but not rest of wings or tail-feathers ; occasionally one or two winter feathers are retained on breast. Crown and upper-part of nape black - brown, feathers with slight margins of cream-yellow, most pronounced on fore-head ; broad white superciliary stripes extend from lores to nape where they join ; rest of nape ash-brown ; remaining upper-parts as winter but feathers of mantle with narrower edges (sometimes mantle almost uniform ash-brown) ; ear-coverts, cheeks and sides of neck

as winter ; chin and throat white ; lower-throat streaked dusky ; upper-breast ash-brown, feathers with faint subterminal bands of dark brown and fringed warm buff ; a narrow sepia line succeeded by a broad white band (sometimes bordered below by a narrow sepia line) separates upper-breast from orange-cinnamon lower-breast and flanks ; belly black ; under tail-coverts cream-white, outer ones tinged pale orange-cinnamon ; remaining under-parts, tail and wings as winter. N.B.—Males in summer are usually not so brightly coloured as females and area of black on belly is smaller but this seems to vary individually, some males appearing quite as richly coloured.

Nestling (Plate 9).—Down on fore-head white or light buff with a median black line extending from base of bill to crown ; crown ochraceous-buff and white irregularly marked black ; on hinder crown a crescent-shaped patch of white, below which a



The Dotterel (*Charadrius morinellus*).
Adult, summer.

black semi-circular line extends below eye from lores to lores ; nape white intermixed with dusky ; remaining upper-parts sandy to ochraceous-buff irregularly mottled black and greyish-white ; superciliary stripe, ear-coverts and cheeks white ; a narrow blackish line extends from lores through eye to nape ; remaining under-parts greyish-white, down dusky at base, breast suffused cream.

Juvenile.—Crown blackish, feathers plentifully margined sandy-isabelline ; buff-white eye-stripes meet on nape ; mantle and scapulars black-brown, feathers fringed sandy-isabelline and cream ; back and rump ash-brown, feathers shaded sepia towards tip and broadly edged sandy-isabelline ; rest of upper-parts as adult winter ; cheeks, throat and sides of neck cream or warm buff narrowly streaked dusky ; chin white ; breast as adult winter but with central streaks and shadings or subterminal bars of sepia most pronounced at sides of breast ; flanks buffish slightly barred dusky ; belly buff or white, outer under tail-coverts marked dusky and tinged buff ; remaining under-parts as adult ; tail-feathers as adult but outer ones more or less washed at tip sandy-isabelline ; wing as adult but innermost secondaries and coverts as scapulars, median coverts sepia edged sandy or light buff.

First winter.—As adult winter but distinguished by sandy-buff instead of pink-cinnamon edges to some median coverts (especially innermost). The juvenile body-plumage (not all scapulars nor all feathers of back and rump), sometimes central pair of tail-feathers, some innermost secondaries and coverts, some median and lesser coverts are moulted Sept. to Nov. but not rest of tail-feathers or wings. *First summer*.—As adult summer and moult as adult. Only to be distinguished when faded buff edges to retained juvenile median coverts are not too abraded. N.B.—Only three specimens examined and these were all as brilliant on under-parts as adults.

Measurements and structure.—♂ wing 143–152 mm., tail 61.5–67.5, tarsus 33.5–37, bill from feathers 14–16.5 (12 measured). ♀ wing 151–161, bill 15.5–18. Primaries : 1st minute, 2nd longest, 3rd 1.5–5 mm. shorter, 4th 11–13.5 shorter, 5th 21–25.5 shorter, 6th 31–36 shorter. Longest innermost secondary between 3rd and 5th primaries. Tail of moderate length, rounded. Tarsus covered with hexagonal scales. Three toes, outer and middle ones webbed at base almost up to 1st joint. Bill short, straight and slender, convex and decurved at tip.

Soft parts.—Bill (ad.) black ; legs and feet (ad.) dull yellow, (juv.) olive-yellow ; iris brown.

CHARACTERS.—No subspecies. Short bill, grey axillaries, no white on inner primaries, upper-parts brown edged pink-cinnamon, in summer belly black distinguish Dotterel from its near allies.

FIELD-CHARACTERS.—Occurs in small trips on coastal marshes, low hills, heaths and fallows on migration to and from nesting-grounds

on mountain-tops in north Britain. Its extraordinary tameness makes examination at close-quarters possible, and characteristic white stripes over eyes, white breast-band and chestnut lower-breast and flanks are apparent, but general coloration is highly cryptic; indeed white shaft of outer primaries and white tail-tips are only salient features in display designed to distract attention from young. Call-note a sweet, twittering whistle "wit-e-wee wit-e-wee wit-e-wee" (Aplin). Alarm-note when young in danger a low "oo-ee." "Keerie keerie," a note resembling one of the Arctic Tern reduced to a whisper, was uttered by a bird brooding young at my feet.

BREEDING-HABITS.—In British Isles haunts mountain tops during breeding-season, chiefly from 3200 ft. to over 4000 ft. *Nest.*—A shallow depression in the moss, with sometimes a few lichens, which are possibly accidental. *Eggs.*—In British Isles normally 3, but sometimes 2 only, with light yellowish-stone ground, blotched and spotted brown-black and a few ashy shellmarks. Average of 100 eggs, 40×28.7 . Max.: 46.4×30.6 and 43.7×31 . Min.: 37.6×28.4 and 39.3×26.8 mm. *Breeding-season.*—Begins last fortnight May, but often not till early June. Late July eggs probably second layings. *Incubation.*—Slater, Pearson and Gloger have found males incubating, but on two or three occasions, females are said to have been shot from nests. Period "rarely more than 18–20 days" (Heysham). Single brooded.

FOOD.—Mainly earthworms and insects, especially small beetles (*Bembidium*, *Elatér*, *Silpha*, *Pachygaster*, *Dorcadion*, etc.) and their larvæ. Small mollusca also eaten.

DISTRIBUTION.—*British Isles.*—Summer-resident (4th week April and early May, early dates March 25, 1843, April 4, 1909, Sussex, April 8, 1909, Lancs., to Aug. and Sept.), and passage-migrant (early May to mid-June and mid-Aug. to end Oct.). Breeds Lake District (very sparingly) and in Cairngorm and Grampian ranges as well as a few localities north of Spey valley and west of Great Glen, and has extended to south of Loch Tay. Formerly bred Kirkcudbright and probably Dumfries. As passage-migrant has occurred many localities England and south Scotland and occasionally Wales, but only rarely west and north Scotland, including Orkneys and Shetlands, and twice Flannan Isles (O. Hebrides). In Ireland fourteen times, Munster and Ulster, chiefly autumn, but twice (flock of twenty and party of three) in April.

DISTRIBUTION.—*Abroad.*—Breeds in north Scandinavia, Lapland and north Russia, Novaya Zemlia, Waigatz, and Arctic Asia (Taimyr, Yenisei, Lena), also in small numbers on the German Riesengebirge (on frontier of Silesia and Bohemia), Styria, Carinthia and Transylvania. Migratory, wintering chiefly in north Africa, Syria, Palestine, Arabia, and Persia. Casual Canaries, Alaska, Japan.

CHARADRIUS ASIATICUS

372. *Charadrius asiaticus asiaticus* Pall. — THE CASPIAN PLOVER.

CHARADRIUS ASIATICUS Pallas, Reise d. versch. Prov. d. Russ. Reichs, II, p. 715 (1773—S. Tartary).

Ægialitis asiatica (Pallas), Saunders, p. 537.

DESCRIPTION.—*Adult male and female.* *Winter.*—Fore-head cream or light buff; crown sepia, feathers edged sandy-buff; nape, mantle, scapulars, back and rump buff-brown, feathers edged sandy-buff; upper tail-coverts pale buff-brown tipped creamy-buff; line below eye and ear-coverts sepia; lores, eye-stripe and sides of neck cream-buff; chin and throat cream-white; pectoral band light drab, feathers broadly tipped cream-white or buff; remaining under-parts white; under wing-coverts with light drab bases; tail-feathers buff-brown, outer feathers paler and broadly tipped white, outer pair narrowly bordered white on outer web; primaries sepia or black-brown, shafts more or less white, inner primaries with some white on outer webs near base; secondaries sepia, inner webs paler and tipped white; innermost secondaries as mantle; primary-coverts dark sepia, inner ones faintly tipped white; rest of wing-coverts buff-brown edged sandy-buff, fainter on lesser coverts. This plumage is acquired by complete moult in autumn. *Summer.*—The body-feathers (not all scapulars), apparently sometimes tail-feathers, sometimes some innermost secondaries and coverts, some median and lesser coverts are moulted Dec. to May, but not rest of wings. Fore-head white; remaining upper-parts as winter; eye-stripe, lores, cheeks, chin and throat white; ear-coverts and narrow line below and in front of eye dusky; breast auburn merging into a black band which divides it from white belly; remaining under-parts as winter; tail and wings as winter (wing-coverts much abraded except for scattered new coverts which are as winter).

Nestling.—(Not examined.)

Juvenile.—Fore-head buffish-white; crown, nape, mantle, scapulars, back and rump olive-brown (lighter on nape), feathers tipped creamy and sandy-buff; upper tail-coverts as adult; eye-stripe, cheeks, chin, throat and sides of neck warm or cream-buff; ear-coverts dusky; remaining under-parts and tail as adult; wing as adult but innermost secondaries and all wing-coverts, except greater, buff-brown edged cream.

First winter.—As adult but distinguished by worn cream edges (least abraded on innermost median coverts) of retained juvenile wing-coverts. The juvenile body-plumage (not all scapulars and apparently not feathers of back and rump), sometimes central pair of tail-feathers, sometimes some innermost secondaries and coverts, some median and lesser coverts are moulted in autumn, but apparently not rest of tail or wings. *First summer.*—Moult as adult after which becomes like adult but may sometimes be

distinguished by cream edges to innermost median coverts ; no females examined.

Measurements and structure.—♂ wing 141–155 mm., tail 49–59.5, tarsus 37–41, bill from feathers 19–23 (12 measured). ♀ wing 140–150, bill 20–23 (10 measured). Primaries : 1st minute, 2nd longest, 3rd equal or 2–6 mm. shorter, 4th 7–15 shorter, 5th 15–27 shorter, 6th 25–38 shorter. Longest inner secondary between 3rd and 6th primaries. Tail square, central pair longest. Other structure as in *C. morinellus*.

Soft parts.—Bill black ; legs and feet light greenish-slate ; iris brown.

CHARACTERS AND ALLIED FORMS.—*C. a. veredus* (Mongolia, N. China) has under wing-coverts and axillaries uniform smoke-brown. Distinguished by white on inner primaries from *C. morinellus*, and by rufous or brownish-buff chest-band, white under-parts and greenish feet from other British species.

BREEDING-HABITS.—Generally found in colonies of about ten pairs on barren clay-flats near salt-lakes. *Nest.*—Shallow depression in ground with scarcely any lining. *Eggs.*—Usually 3, probably sometimes 4, ochreous-clay, thickly spotted with black. Menzbier and Dresser give measurements as 36.8×25.9 and 36.8×27.1 . *Breeding-season.*—May. *Incubation.*—No details.

FOOD.—Only insects recorded (coleoptera and cicadæ).

DISTRIBUTION.—*England.*—Four or five. Male adult shot and another bird seen near Great Yarmouth (Norfolk), May 22, 1890 (Saunders, p. 537). A pair shot Romney Marsh (Sussex), July 13, 1911 (H. W. Ford-Lindsay, *Brit. B.*, v, p. 115). Male shot Pevensey (Sussex), March 30, 1914 (J. B. Nichols, *op. c.*, viii, p. 13).

DISTRIBUTION.—*Abroad.*—Breeds in south-east Russia and through Khirgiz Steppes to salt-steppes of Turkestan. Winters in west India and Africa. Replaced by subspecies in Mongolia and Manchuria.

CHARADRIUS HIATICULA

373. *Charadrius hiaticula hiaticula* L.—THE RINGED PLOVER.

CHARADRIUS HIATICULA Linnæus, *Syst. Nat.*, ed. x, i, p. 150 (1758—Europe and America. Restricted typical locality : Sweden).

Charadrius hiaticula major Seebohm, *Hist. Brit. B.*, iii, p. 20 (1885—Seebohm separated a larger race, supposed to be resident in the British Isles).

Egialitis hiaticula (Linnæus), Yarrell, iii, p. 257 ; Saunders, p. 539.

DESCRIPTION.—*Adult male. Winter.*—Feathers at base of upper mandible, lores and broad band passing below eye across ear-coverts black ; fore-head and narrow line below eye white ; across fore-part of crown, from eye to eye a broad black band continuous with a black line encircling eye ; from above middle of eye extending almost to nape a whitish streak ; rest of crown hair-brown ; nuchal

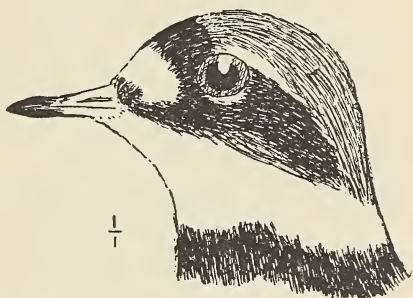


(4.5THS NATURAL SIZE.)

NESTLINGS IN DOWN of: 1, The Ringed Plover (*Charadrius h. hiaticula*). 2, The Kentish Plover (*C. a. alexandrinus*). 3, The Lapwing (*Vanellus vanellus*). 4, The Oyster-Catcher (*Haematopus o. ostralegus*). 5, The Stone-Curlew (*Burhinus a. oedicnemus*).

[Face p. 516.]

collar white ; below this and continuous with black pectoral band, a black collar ; rest of upper-parts hair-brown, sides of back and rump and lateral upper tail-coverts white ; chin and throat white ; upper-breast with a broad black pectoral band, some feathers tipped white ; remaining under-parts white ; tail-feathers hair-brown, banded black-brown subterminally and broadly tipped white (central pair only slightly), two outer pairs white, 2nd pair and sometimes 1st (or outer pair) with an irregular black-brown marking on inner web, 3rd and sometimes 4th with outer webs narrowly bordered white ; primaries black-brown, pale and shading to white towards base of inner webs, 5th and succeeding with a narrow white streak on outer web continuous with shaft, this streak increasing in width on inner primaries ; secondaries black - brown or dark hair - brown narrowly tipped white, inner webs paler, basal halves white, inner secondaries white, often with an irregular hair-brown marking, innermost and coverts as mantle ; primary-coverts black-brown faintly tipped white ; rest of wing-coverts hair-brown, greater broadly tipped white. This plumage is acquired by complete moult July to Nov. *Summer*.—The body-feathers (not all scapulars), occasionally tail-feathers, some innermost secondaries and coverts, some median and lesser coverts but not rest of wing are moulted March to May. Coloration as winter but upper-parts usually paler.*



The Ringed Plover (*Charadrius h. hiaticulo*).
Female adult, summer.

Adult female. Winter.—As male but band below white nuchal collar less defined and sometimes intermixed with hair-brown feathers ; feathers at base of upper mandible, lores and feathers round and below eye and band on fore-part of crown hair-brown, intermixed with black or black-brown feathers with or without narrow buff tips ; pectoral band mixture of black, sooty-brown and ash-brown feathers, mostly tipped with white or buff. *Summer*.—Like adult summer male.

Nestling (Plate 8).—Down on fore-head white ; crown greyish-buff irregularly streaked and speckled black-brown ; an irregular

* Two adult winter males in my collection have black band on fore-part of crown and black pectoral band intermixed with a few hair-brown and sooty-brown feathers, those of pectoral band with broad tips of paler brown, buff, or white. In some summer males (possibly old birds) these bands are broader than in others and black patch below eye is more extensive. In some females these bands are narrower than in others, while black patch below eye may be intermixed with hair-brown feathers.—A.C.M.

black-brown line (often obsolete), from base of upper mandible down centre of crown, another encircling crown from eye to eye; nuchal collar and tip of wings white; remaining upper-parts greyish-buff, yellowish-buff across mantle and wings, irregularly and finely marked and speckled black-brown; an irregular black-brown or dusky-brown line along wing, another (often obsolete) on sides of rump to uropygial tuft; uropygial tuft black tipped buff; a black-brown line from base of upper mandible to eye and sometimes another under eye to nape; under-parts white.

Juvenile. Male and female.—At base of upper mandible, lores, band below eye and ear-coverts hair-brown, feathers sometimes faintly tipped buff and band under eye sometimes intermixed with black-brown; line below eye, fore-head and an ill-defined eye-stripe (broadest behind eye and almost incomplete above eye) white or light buff; collar below white nuchal collar black-brown, feathers tipped buff, sometimes ill-defined and intermixed with hair-brown; remaining upper-parts hair-brown as adult but feathers with cream or sandy-buff margins, some with a subterminal shading of darker brown; under-parts as adult but pectoral gorget, which is usually almost incomplete towards centre of breast, hair-brown (sometimes intermixed with sooty-brown), feathers with light buff, and sometimes white, tips; centre of breast suffused buff; tail and wings as adult but innermost secondaries and coverts as upper-parts; median and lesser coverts as adult but edged sandy buff or cream.

First winter. Male and female.—Like adults but may be distinguished by worn buff edges of retained juvenile wing-coverts. The juvenile body-feathers (not all scapulars), tail-feathers, innermost secondaries and coverts and some median and lesser coverts are moulted Aug. to Jan. but not rest of wings. *First summer.*—Moult as in adult, after which both sexes resemble adults and are only to be distinguished when buff edges to wing-coverts are not too abraded. N.B.—Some birds examined were moulting primaries in spring and summer.

Measurements and structure.—♂ wing 125–139 mm., tail 53–65, tarsus 22–27, bill from feathers 13.5–15.5 (12 British measured). ♀ wing 127–138, bill 13–16.* Primaries: 1st minute, 2nd longest, 3rd 2–6 mm. shorter, 4th 9–14 shorter, 5th 16–22 shorter, 6th 22–30 shorter. Longest innermost secondary between 4th to 6th primaries. Tail of moderate length, rounded. Three toes, outer and middle ones webbed at base nearly up to first joint, middle and inner ones very slightly webbed at base. Bill short, straight, convex at tip, nasal groove extending to commencement of arched part at tip of culmen.

Soft parts.—Bill (ad. ♂ winter and summer and ad. ♀ summer) bright yellow, tip black, (ad. ♀ winter and 1st winter ♂ and ♀) upper mandible horn, tip darker, base of under mandible yellowish, (juv.)

* Breeding birds examined have wing measurements: British 4 ♂ 129–135, 8 ♀ 131–137; Scandinavian 7 ♂ 123–131, 3 ♀ 125–133.—A C.M.

olive-black, base of under mandible yellow; legs and feet (ad. ♂, ad. ♀ summer) bright yellow, (ad. ♀ winter and 1st winter ♂ and ♀) lemon-yellow, (juv.) yellowish-flesh; iris brown.

CHARACTERS AND ALLIED FORMS.—*C. h. tundræ* (E. Siberia) has upper-parts darker.* For distinctions of *C. semipalmatus*, *C. d. curonicus* and *C. a. alexandrinus* see under those species. Small size, black and white bands on head, broad black (or brown) pectoral band and hair-brown upper-parts distinguish this species from its allies.

FIELD-CHARACTERS.—Mainly a bird of sandy shores during breeding-season, although a few nest inland. From autumn to spring abounds on low-lying coasts, often in large flocks, associated with Dunlins and other small waders. Robust form and intensity of black and white markings are outstanding characters in adult. Young birds having imperfect breast-band and other marks comparatively obscure are something like Kentish, but legs are yellow, not black. Little Ringed Plover is smaller and slighter although like Ringed in general coloration, but innermost primaries are uniformly brown and consequently no wing-bar shows in flight. Call-note a harsh "trr." Love-song, a sweet trilling "trooi-trooi" is uttered during a slow wavering flight at some height above beach. "Tool-tooli" connotes some uneasiness; more definite alarm-notes are "pee-ip" and "pen-y-et."

BREEDING-HABITS.—In British Isles chiefly on low-lying sandy shores or estuaries; also occasionally inland by shores of lakes and rivers and less frequently on sandy heaths, sewage farms and even in cornfields at some distance from sea. *Nest*.—Depression in sandy ground, turf or shingle, sometimes lined with bits of shell or small stones, in some cases under shelter of plant. Inland nests are sometimes quite substantially built of bents, etc. *Eggs*.—Normally 4, sometimes 3 only, occasionally 5, pale stone-buff, generally finely spotted brown-black, and underlying ash-grey. Scarce variety has large blackish blotches, and white eggs have been met with without markings. Average of 100 British eggs, 35.9×25.9 . Max.: 39×26.5 and 37×28.5 . Min.: 32.2×25 and 32.7×24 mm. *Breeding-season*.—Exceptionally from early March onward to July and even Aug., but most eggs laid May and June. *Incubation*.—By both sexes in turn. Period 21 to 25 days. Must be double-brooded in some cases, but many late nests are probably 2nd or 3rd layings.

FOOD.—Varied, including insects, chiefly coleoptera (*Apion*, *Aphodius*, *Haliplus*, *Hydroporus*, etc.) and diptera; smaller

* It is possible that *C. h. tundræ* occurs in the British Islands as a passage-migrant or winter-visitor. While it has distinctly darker upper-parts than *C. h. hiaticula* in summer, latter is decidedly darker in winter than in summer plumage, so that it seems impossible to differentiate and state that the darker specimens are *tundræ*. The measurements of the two forms unfortunately overlap, breeding birds of *C. h. tundræ* measuring 8 ♂ wing 127–134, bill 13–14, 1 ♀ wing 129, bill 14.—A.C.M.

crustacea (especially Amphipoda, Gammaridæ, etc.), worms, mollusca (chiefly small marine univalves), and vegetable matter.

DISTRIBUTION.—*British Isles*.—Resident (to what extent breeding-birds are migrants is uncertain), winter-visitor and passage-migrant (mid-Aug. to mid-Nov. and mid-March to mid-May), also weather-movements both of arrival and departure in winter months. Generally distributed flat coasts, and also a few breed inland as in the Cheviots, west Suffolk, Norfolk, Middlesex, Surrey, and Worcester, on banks of rivers and lakes, warrens, sewage-farms, etc.

DISTRIBUTION.—*Abroad*.—Færoes, Iceland, Lapland, Scandinavia to Mediterranean on sea-shores, lakes and sometimes rivers, north Russia, Bear Island and Spitsbergen, also Greenland and Cumberland Sound in eastern arctic America. Winters on Mediterranean and in Africa, as far south as Cape Colony, casual in Atlantic islands, north-west India, Australia, Chile and Barbados. Replaced by an allied race in Siberia and its islands.

CHARADRIUS SEMIPALMATUS

374. *Charadrius semipalmatus* Bp.—THE SEMI-PALMATED RINGED PLOVER.

CHARADRIUS SEMIPALMATUS Bonaparte, Journ. Acad. Nat. Sci., Philadelphia, V., p. 98 (1825—North America).

Charadrius semipalmatus, Thomas Parkin, Brit. B., X, p. 254.

DESCRIPTION.—*Adult male. Winter*.—Much like *C. h. hiaticula* but differing as follows: narrow line at base of upper mandible from eye to eye drab, feathers faintly edged white; crown drab, fore-part of crown without black band but sometimes intermixed with black-brown feathers; black nuchal collar ill-defined, sometimes absent, sometimes intermixed with drab-brown feathers; above eye a narrow and ill-defined white eye-stripe continuous with white patch behind eye, some feathers tipped drab or black-brown; patch below eye drab intermixed with black-brown feathers; ear-coverts drab; pectoral band much narrower especially towards centre than in *C. h. hiaticula* and drab, some feathers tipped white and more or less marked same and intermixed with black-brown feathers; secondaries as in *C. h. hiaticula* but white bases narrower and usually confined to inner webs (in most *C. h. hiaticula*, secondaries have basal halves white), inner secondaries drab or dusky brown, outer webs more or less marked white, inner webs more or less white towards base, occasionally one inner secondary white, suffused palest drab, but usually inner secondaries with much less white than in *C. h. hiaticula*. This plumage is acquired by complete moult July to Dec. *Summer*.—The body-feathers but not all scapulars, nor all (sometimes not any) feathers of back and rump, apparently occasionally tail-feathers, some innermost secondaries and coverts, some median and lesser coverts are moulted Jan. to May but not rest of wings. Some winter body-feathers sometimes retained. Except for secondaries resembles *C. h. hiaticula*.

Adult female. Winter.—Differs from *C. h. hiaticula* as follows : narrow line at base of upper mandible from eye to eye drab, feathers faintly edged white ; crown uniform drab, black band on forepart of crown absent ; black nuchal collar absent ; an ill-defined white eye-stripe continuous with white patch behind eye ; patch below eye and ear-coverts drab ; pectoral band narrower towards centre than in *C. h. hiaticula* and drab, some feathers tipped and more or less marked white ; inner secondaries differ as described under male. *Summer.*—Like male but sometimes patch below eye and ear-coverts and sides of black pectoral band more or less intermixed with new or worn drab feathers, sometimes ear-coverts drab.

Nestling.—Like nestling *C. h. hiaticula* but upper-parts (except hind-neck which is white) darker, being light buff plentifully intermixed with pronounced black markings. (Three specimens examined.)

Juvenile.—Similar to juvenile *C. h. hiaticula* but inner secondaries as adult. Owing to abrasion of buff edges, upper-parts become more or less uniform drab-brown before commencement of post-juvenile moult.

First winter. Male.—As adult male and only to be distinguished by buff tips to retained juvenile wing-coverts, especially innermost median. The body-feathers, not all scapulars, not tail-feathers in few examined, some innermost secondaries and coverts, some median and lesser coverts but not rest of wings are moulted in late autumn and early winter. *Female.*—As adult female and only distinguished by buff tips to retained juvenile wing-coverts, especially innermost median coverts.

First summer.—(Not examined.)

Measurements and structure.—♂ wing 121–128 mm., tail 48–56, tarsus 22–24, bill from feathers 12–14 (12 measured). ♀ wing 121–126, bill 12–14. Wing-formula and other structure as in *C. h. hiaticula* but at all ages outer and middle toes webbed up to 1st joint, middle and inner toes half-way up to 1st joint.

Soft parts.—Bill orange-yellow at base, black terminally ; legs and feet pale flesh-colour.

CHARACTERS AND ALLIED FORMS.—No subspecies. Most likely to be confused with *C. h. hiaticula* from which it differs as above described.

FIELD-CHARACTERS.—Very like *C. h. hiaticula* in appearance and character, with narrower breast-band. Rare inland, prefers to follow tides on sandy or pebbly shores, or mud of bays or creeks. Sociable, joins company with almost any species of shore-bird, and with swift strong flight able to keep up with those much larger than itself. When on the wing calls frequently, “tyoo-eep,” a short mellow whistle with far-reaching quality. (J. T. Nichols.)

BREEDING-HABITS.—Much resembles Ringed Plover, frequently breeding on shore above high-water mark. *Nest.*—A scratching in sand or shingle. *Eggs.*—Normally 4, occasionally 3 only, pyriform,

spotted irregularly with black-brown and umber on creamy ground. Average of 22 eggs, 33.9×23.9 . Max. : 36.2×24.3 and 35.5×25.5 . Min. : 31.4×22.7 mm. *Breeding-season*.—June and July.

Food.—Insects, small crustacea and small mollusca, but exact details wanting.

DISTRIBUTION.—*England*.—One. Female, Rye (Sussex), April 8th, 1916 (*ut supra*).

DISTRIBUTION.—*Abroad*.—Breeds in N. America from Cumberland Sound and Melville Island to Upper Yukon, south Mackenzie, Keewatin, Gulf of St. Lawrence and Nova Scotia. Winters from S. California, Louisiana and S. Carolina throughout S. America to Galapagos Is., Chile and Patagonia, probably also in Tehuktchi Peninsula. Casual Greenland and Bermuda.

CHARADRIUS DUBIUS

375. *Charadrius dubius curonicus* Gm.—THE LITTLE RINGED PLOVER.

CHARADRIUS CURONICUS Gmelin, Syst. Nat., I, ii, p. 692 (1789—"Habitat in Curonia," i.e. Kurland. Cf. Ibis 1915 and Hartert, Vög. pal. Fauna, p. 1535).

Charadrius minor MacGillivray, Man. Brit. B., II, p. 53 (1840).

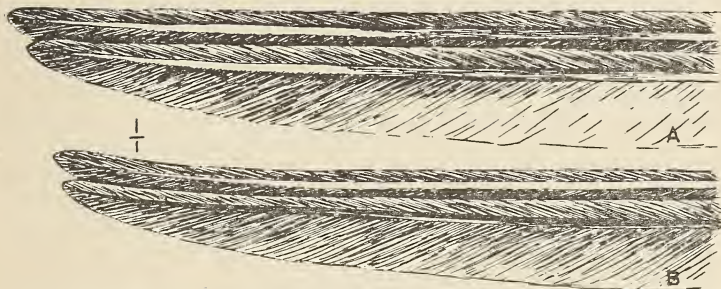
Egialitis curonica (Gmelin), Yarrell, III, p. 262; Saunders, p. 541.

Charadrius dubius Scop., Hand-List. (1912), p. 167.

DESCRIPTION.—*Adult male and female*. *Winter*.—Narrow line on fore-head and broad band on fore-part of crown black, divided by a broad band of white; lores, band under eye, ear-coverts and narrow line over eye black; above latter a very narrow white line which joins black band on fore-head and is sometimes continued across fore-head; crown drab-brown; nuchal collar white succeeded by a black one which joins pectoral band; mantle and scapulars drab-brown, feathers faintly edged sandy; back, rump and upper tail-coverts ash-brown; sides of back, rump and lateral tail-coverts white; chin, throat and sides of neck white; pectoral band black, some feathers edged white; remaining under-parts white; central pair of tail-feathers sepia, two outermost pairs white marked sepia, remainder sepia broadly tipped white and indistinctly banded subterminally black-brown as are central pair; primaries sepia (no white on webs), second with a white shaft otherwise shafts brown; secondaries ash-brown, paler on inner webs and tipped white, innermost secondaries drab-brown faintly edged white; primary-coverts sepia edged white; greater-coverts ash-brown narrowly tipped white; median and lesser coverts drab-brown, narrowly edged white and buff. This plumage is acquired by complete moult July to Nov. *Summer*.—The body-feathers (not all scapulars), occasionally tail-feathers, some innermost secondaries and coverts, usually some median and lesser coverts are

moulted Feb. to May, but not rest of wings. Coloration as winter. N.B.—Some females have black patch on ear-coverts smaller and more or less intermixed with drab-brown and sometimes black feathers are more or less absent.

Nestling.—Like that of *C. h. hiaticula* but upper-parts cinnamon-buff rather than greyish-buff, irregularly mottled and speckled black-brown; black-brown line round hinder crown more pronounced; an irregular, but distinct black-brown line along wing, another along side of back to uropygial tuft; a blackish patch on either side of breast; remaining under-parts as in *C. h. hiaticula*.



Two outer primaries of: (A) The Ringed Plover (*C. h. hiaticula*). (B) The Little Ringed Plover (*C. d. cauronicus*).

Juvenile.—Fore-head buffish-white; upper-parts as adult but feathers more or less edged sandy-buff, those of crown, nape, mantle and scapulars with subterminal sepia borders; nape encircled by a white collar below which is a black-brown band, feathers tipped sandy-buff; ear-coverts, lores and band under eye sepia, feathers edged buff; sides of neck, chin and throat cream-white; pectoral band drab-brown narrowing towards centre, feathers tipped buff; remaining under-parts as adult; tail-feathers as adult but more or less washed buff at tip; wing as adult but innermost secondaries with sandy-buff fringes and sometimes faintly mottled sepia towards tip, wing-coverts with sandy-buff fringes and faint subterminal sepia borders.

First winter. Male.—As adult winter but without black band on fore-part of crown; fore-head creamy-buff, rest of crown drab-brown, feathers edged sandy; black band below white nuchal collar sometimes less defined and intermixed with drab-brown; lores black tipped buff; ear-coverts dusky-brown or black-brown; chin and throat white tinged buff; black pectoral band narrower towards centre than in adult and intermixed with drab-brown, feathers broadly edged sandy-buff or white; wing as adult except for some retained juvenile wing-coverts. The juvenile body-plumage (not all scapulars and apparently not feathers of back and rump), tail-feathers, innermost secondaries and coverts, some median and lesser coverts are moulted in autumn but not rest of

wings. *Female*.—As male but black collar on nape not so well defined and plentifully intermixed with drab-brown; lores and ear-coverts dusky-brown; pectoral band ash-brown with broad buff edges decreasing in width towards centre where it is all but incomplete.

First summer. Male.—The body-feathers (not back, rump or all scapulars), tail-feathers, innermost secondaries and coverts, occasionally some median and lesser coverts are moulted in spring but not rest of wings. Coloration as adult summer and can only be distinguished with certainty when sandy-buff edges of juvenile feathers of back and rump and wing-coverts are not abraded. *Female*.—Lores and ear-coverts browner and pectoral band narrower and not so black as in adult female, some ash-brown juvenile feathers remaining.

Measurements and structure.—♂ wing 111–119 mm., tail 50–60, tarsus 22–25, bill from feathers 12–14 (12 measured). ♀ wing 112–120, bill 12–14. Primaries: 1st minute, 2nd longest, 3rd 2–4 mm. shorter, 4th 6–10 shorter, 5th 14–20 shorter, 6th 23–28 shorter. Longest innermost secondary between 3rd and 5th primaries. Other structure as in *C. h. hiaticula* but bill more slender.

Soft parts.—Bill black, utmost base of lower mandible yellowish-flesh; legs and feet pale flesh; iris deep brown.

CHARACTERS AND ALLIED FORMS.—*C. d. dubius* (Philippine Isles, Hainan, Formosa) has longer and stouter bill; *C. d. jerdoni* (India, Borneo, New Guinea) is usually smaller, black frontal line narrower and sometimes absent. Distinguished in all plumages from *C. h. hiaticula* and *C. a. alexandrinus* by brown primary-shafts (except 2nd which is white) and by absence of white on webs of primaries; inner secondaries ash-brown tipped white, not white as in *C. h. hiaticula*.

FIELD-CHARACTERS.—Much like Ringed Plover but smaller and slighter; size is however deceptive. On ground flesh-coloured, not orange, legs should be looked for, on wing no white on inner primaries, which in Ringed Plover makes a distinctive line across primaries, and less white on secondaries. Love-song and flight and other habits such as crouching and trailing wings, lying over on side with wing up and leg outstretched, etc., when young in danger much as in Ringed Plover, but is considerably more noisy and demonstrative. Alarm note a very plaintive “whee-ar” constantly repeated. (H.F.W.)

BREEDING-HABITS.—Although breeding on low coasts, also frequently found by freshwater lakes, on sandbanks in rivers, etc., inland. *Nest*.—A scratched out hollow in sand, on dry mud or among shingle. *Eggs*.—Normally 4, sometimes 3 only, pyriform, pale stone-buff, generally freely marked with small brown and ash-grey spots and streaks, but also sometimes with bolder black spots, closely approaching typical Kentish Plovers' eggs, but on average smaller. Average of 100 eggs, 29.8×22.08 . Max.: 32.8×23 and 30.1×23.5 .

Min.: 27.3×21.1 and 28.6×21 mm. *Breeding-season*.—Exceptionally from mid-March in Mediterranean, but normally from April in south Europe and late May in north to June. *Incubation*.—Apparently by both sexes. Period 22 to 24 days. Single brooded.

Food.—Chiefly insects and their larvæ (small coleoptera, diptera and larvæ of Phryganeidæ).

DISTRIBUTION.—*Great Britain*.—Very rare vagrant. Some ten authentic examples recorded. Sussex two; Scilly one, Oct. 23, 1863; Middlesex two, Aug., 1864; Isle of Wight one, Aug., 1864 (Saunders, p. 541); Christchurch (Hants.), Aug., 1860, and April 28, 1879; Rye (Sussex), April, 1914; North Uist (O. Hebrides) (probably Oct.), 1908. Also one from Aberdeen recorded by Sims.

DISTRIBUTION.—*Abroad*.—Nests in north, central and south Europe, as well as in north-west Africa and Canaries, eastwards through northern Asia (south to Turkestan) to Japan. Winters in Africa, India, and Malayan Archipelago. Casual in N. America. Replaced by allied race in India, Borneo and New Guinea (but to latter two countries probably only migrant), and by another in Philippine Islands, south China and islands.

CHARADRIUS ALEXANDRINUS

376. *Charadrius alexandrinus alexandrinus* L.—THE KENTISH PLOVER.

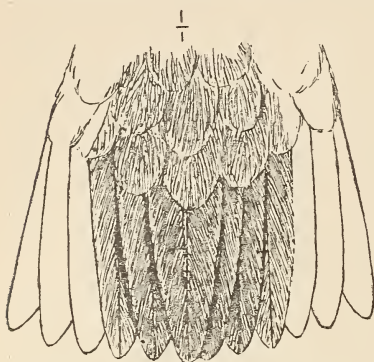
CHARADRIUS ALEXANDRINUS Linnæus, Syst. Nat., ed. x, i, p. 150 (1758—Egypt).

Charadrius cantianus Latham, Index Orn. Suppl., p. lxvi (1801—Kent. Name misspelt *cantiacus* by Salvin, Fritsch, and others).

Ægialitis cantiana (Latham), Yarrell, III, p. 267; Saunders, p. 543.

DESCRIPTION.—*Adult male*. *Winter*.—Fore-head white; fore-part of crown black, feathers faintly edged tawny; crown and nape ash-brown, feathers narrowly edged tawny; nape with a white collar; mantle and scapulars ash-brown, feathers faintly edged sandy; back and rump pale brown, sides of rump white; upper tail-coverts pale brown fringed tawny, outer ones white; lores and band below eye black intermixed dusky-brown, feathers faintly edged white; eye-stripe white washed tawny towards nape; ear-coverts black-brown or dusky-brown; whole under-parts white except for two patches of black (feathers narrowly edged white) more or less intermixed with ash-brown at sides of upper-breast; tail-feathers pale brown, central pair sepia, three outer pairs white; primaries pale sepia with white shafts which from 3rd inwards are brown proximally, inner primaries with outer webs largely white; secondaries pale brown with white tips, inner webs paler, inner secondaries pale smoke-brown with white on margins of both webs, innermost pale ash-brown; primary-coverts sepia, inner ones tipped white; greater coverts pale brown tipped white; median and lesser coverts ash-brown, narrowly edged sandy. This plumage

is acquired by complete moult July to Nov. *Summer*.—The body-feathers (not all scapulars), occasionally tail-feathers, some inner-



Tail of the Kentish Plover (*Charadrius a. alexandrinus*).

most secondaries and coverts, some median and lesser coverts, but not rest of wings are moulted March to May. Coloration as in winter but crown and nape orange-cinnamon, feathers of crown ash-brown towards base; mantle, scapulars and innermost secondaries ash-brown with faint tawny edges and slightly tinged tawny; lores, ear-coverts and band below eye black intermixed with a few white feathers below eye; patch at sides of breast black. N.B.—In late summer abrasion of orange cinnamon-tips makes crown more or less ash-brown.

Adult female. Winter.—As male but lacks black on crown which is ash-brown, feathers narrowly edged tawny or sandy; white on fore-head usually less extensive; lores, band below eye and ear-coverts pale ash-brown; patch on sides of breast ash-brown, feathers narrowly edged white. *Summer*.—Coloration as winter but feathers of crown, especially those bordering white collar, with more or less pronounced tawny edges; mantle, scapulars and innermost secondaries as in summer male; lores, band below eye, ear-coverts and line from eye to nape tawny; patch on side of breast ash-brown, feathers tipped tawny and with a few tawny feathers.

Nestling (Plate 8).—Like *C. h. hiaticula* but upper-parts light buff rather than greyish-buff, and black-brown line encircling hinder-crown paler and ill-defined.

Juvenile. Male and female.—Like adult winter female but feathers of crown and nape edged light buff; feathers of mantle and scapulars fringed sandy-buff; back, rump and central upper tail-coverts sepia, feathers tipped sandy-buff; lores tipped buff, or white washed buff; eye-stripe and ear-coverts buff; feathers of brown patch at sides of upper-breast edged sandy-buff; rest of upper- and under-parts as adult; tail-feathers sepia fringed sandy-buff, three outer pairs as adult; wing as adult but innermost secondaries and coverts, median and lesser coverts broadly fringed sandy-buff or cream.

First winter. Male and female.—As adult female but distinguished by broad sandy-buff edges to retained juvenile median coverts (especially innermost) and lesser coverts. The juvenile body-plumage (not all scapulars), tail-feathers, innermost secondaries and coverts, some median and lesser coverts are moulted Sept. to Dec. *First summer. Male and female*.—Moult as adult

after which they become as adults but are distinguished by sandy-buff edges (when not too abraded) to some retained juvenile median (especially innermost) and lesser wing-coverts.

Measurements and structure.—♂ wing 109–118 mm., tail 43–46, tarsus 25.5–29, bill from feathers 14–15 (12 measured). ♀ wing 106–117, bill 14–15 (one 16). Primaries: 1st minute, 2nd longest, 3rd equal or 2–5 mm. shorter, 4th 6–9 shorter, 5th 14–17 shorter, 6th 23–26 shorter. Longest inner secondary between 3rd and 6th primaries. Tail square, two central pairs exceeding rest. Bill short and slender, upper mandible slightly convex at tip. Other structure as in *C. h. hiaticula*.

Soft parts.—Bill black; legs and feet lead-grey; iris dark brown.

CHARACTERS AND ALLIED FORMS.—*C. a. dealbatus* (S. China to Japan) has stouter and longer bill; *C. a. seebohmi* (Ceylon) is smaller; *C. a. nivosus* (N. and S. America) has no black on lores. Distinguished in all plumages from *C. h. hiaticula* and *C. d. curonicus* by three white outer pairs of tail-feathers.

FIELD-CHARACTERS.—Distinguished by black legs from orange-legged Ringed Plover; it is besides smaller and greyer above, whilst black markings are fainter, breast-band merely an obscure black patch on each side of breast. Call-note “trr.” Love-song, uttered in wavering flight like Ringed Plover’s, described as “trit-tritrit-ritritrrr.” Alarm-cry when young in danger “too-it, too-it, ittup, ittup.”

BREEDING-HABITS.—In British Isles only found on shingle banks, but abroad also on sandy flats, dried mud, etc., sometimes far inland. *Nest.*—A mere hollow in shingle or sand, occasionally lined bits of lichen, twig, shell or dead leaves. *Eggs.*—Normally 3 but abroad 4 have been rarely met with and sets of 5 are said to have been found at Dungeness, 1904–6; without gloss, yellowish-stone with black streaks and spots as a rule, but varying in large series from pale stone to deep olive-brown and greenish-brown, while erythristic type has also occurred. Markings at times form zone of interlaced lines at big end. Average of 100 eggs, 32.5×23.5 . Max.: 35.2×23.7 and 32×25 . Min.: 30.2×23.2 and 32.6×22.5 mm. *Breeding-season.*—From end April onward to July, but most eggs laid in May. *Incubation.*—Apparently by both sexes. Period not definitely known; Naumann’s figures (15–17 days) probably under estimated. Apparently single brooded.

FOOD.—Small insects and their larvæ, especially coleoptera and diptera; also apparently a small species of spider; and small mollusca (*Helix* sp.), as well as worms. Sandhoppers also taken abroad and probably in England as well.

DISTRIBUTION.—*England.*—Summer-resident (2nd week April, early dates Sussex March 24, 1909, 31st, 1910) to late Sept. (late dates Kent Oct. 10, 1907, Hants. Lt., Oct. 9/10, 1910). Breeds only

coasts of Kent and rarely Sussex. Very rare migrant along south coast to Devon and Cornwall and up east coast to Yorks. (seven). Very rare vagrant elsewhere, Teesmouth (Durham) one, May, 1904, Marbury Mere (Cheshire) pair seen, April 29, 1908, Mansfield (Notts.) one seen, April, 1904. *Ireland*.—Very rare vagrant. On four or five occasions autumn and winter, latest 1852.

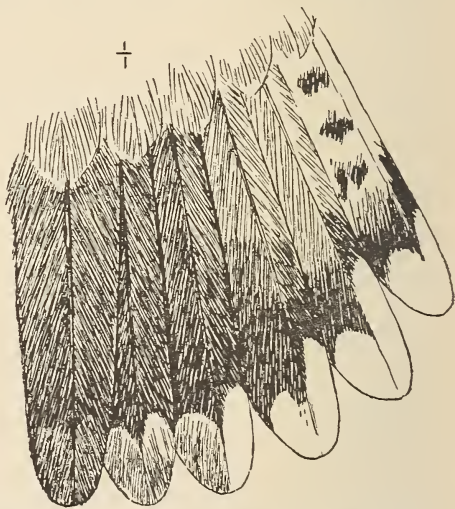
DISTRIBUTION.—*Abroad*—Breeds in Europe from south Sweden to Mediterranean and north Africa to salt swamps in Sahara, Madeira, Canary, Cape Verde Islands and Azores, east to Central Asia, S.E. Siberia and Corea. Winters in Africa, India, Ceylon, Burmah to Sunda Islands, south China and Japan. Replaced by allied forms in China and Japan, America, and Ceylon.

CHARADRIUS VOCIFERUS

377. *Charadrius vociferus* L.—THE KILLDEER PLOVER.

CHARADRIUS VOCIFERUS Linnæus, Syst. Nat., ed. x, i, p. 150 (1758—*America*. Restricted typical locality: Carolina. Ex Catesby).
Egialitis vocifera (Linnæus), Yarrell, III, p. ix; Saunders, p. 545.

DESCRIPTION.—*Adult male and female.* *Winter.*—Feathers at base of upper mandible black-brown; fore-head white; fore-part of crown from eye to eye black; rest of crown and part of nape sepia, feathers faintly edged tawny most pronounced bordering white collar; white collar succeeded by a black one, separates crown from mantle; mantle and scapulars sepia, feathers mostly narrowly edged tawny; back, rump and upper tail-coverts ochraceous-tawny; band from crown above centre of eye to nape white, feathers bordering nape more or less tawny; a brown band intermixed with black extends below eye from lores to ear-coverts; rest of neck, chin and throat white; broad black pectoral band is divided into two unequal halves by an irregular band of buff-tipped white feathers, feathers of lower and narrower half of black band edged white; sides of lower-breast sepia, feathers faintly edged tawny; remaining under-parts white; lower under tail-coverts sometimes tinged



Half the tail of the Killdeer Plover (*Charadrius vociferus*).

ochraceous-tawny and irregularly marked brown; tail-feathers sepia, darker subterminally and broadly tipped white or ochraceous-tawny, outer ones washed latter colour, central pair sepia shaded darker and narrowly tipped buff, outer pair usually white, barred irregularly black-brown and sometimes suffused ochraceous-tawny; primaries dark sepia faintly tipped white, outer webs black-brown, inner webs largely white and from 4th or 5th inwards with a white mark along shaft and on outer web, 3rd usually and 2nd sometimes with a white shaft-streak towards tip; secondaries sepia with white tips and bases and more or less white on inner webs, inner ones largely white on both webs, innermost as mantle; primary-coverts black-brown tipped white; greater coverts sepia broadly edged white forming a white wing-bar; innermost greater, median and lesser coverts ash-brown fringed tawny. This plumage is acquired by complete moult July to Nov. *Summer*.—The body-feathers (apparently not feathers of back, rump or all scapulars), some innermost secondaries and coverts, some median and lesser coverts but not rest of wings and apparently not tail-feathers are moulted Feb. to June. Coloration as winter; wing save for new coverts faded and worn. N.B.—Spring moult seems to extend over a long period and sometimes is never completed.

Nestling.—(Not examined.)

Juvenile.—Like adult but black bands on crown and nape narrower, that on nape ill-defined; crown, mantle and scapulars sepia, feathers edged sandy-buff; band from lores to ear-coverts sepia, intermixed with a few black-brown feathers; pectoral band narrower; innermost secondaries and coverts as mantle; median and lesser coverts as adult but edged sandy-buff.

First winter.—As adults and difficult to distinguish with certainty; in early winter some worn retained juvenile wing-coverts with faded sandy-buff edges indicate a first winter bird, as compared with freshly moulted wing-coverts of adult. The juvenile body-plumage (not feathers of back, rump or all scapulars), apparently tail, some innermost secondaries and apparently their coverts, some median and lesser coverts but not rest of wings are moulted Aug. to Oct. *First summer*.—As adult summer and not to be distinguished; moult as adult.

Measurements and structure.—♂ wing 156–171 mm., tail 86–102, tarsus 32–38, bill from feathers 18–23 (12 measured). ♀ wing 161–173, bill 18.5–20.5. Primaries: 1st minute, 2nd longest, 3rd equal or 1–5 mm. shorter, 4th 8–14 shorter, 5th 20–27 shorter, 6th 30–40 shorter. Longest inner secondary between 4th and 6th primaries. Tail long and graduated, central pair longest. Other structure as in *C. h. hiaticula*.

Soft parts.—Bill black; legs and feet dull yellow; iris brown.

CHARACTERS AND ALLIED FORMS.—*C. v. rubidus* (W. Indies) and *C. v. peruvianus* (Peru) have been described as smaller and with broader tawny edges to upper-parts. Distinguished in all plumages

from its near allies by ochraceous-tawny back, rump and upper tail-coverts.

FIELD-CHARACTERS.—Apart from larger size, separable from other "Ringed" Plovers by *double* black band across breast. Rufous rump and longish tail also conspicuous. Mostly an inland bird, frequenting dry rolling pastures, borders of ponds and lakes, and wet meadows. Occurs over coastal marshes on migration, but seldom alights there and does not associate with its maritime relatives. In southern U.S. in winter frequents seashore. On ground bobs head and neck with great frequency. Flight swift and buoyant. A noisy bird, its cry sharp and ringing "kee-hee!" or "kil-dee!" (J. T. Nichols.)

BREEDING-HABITS.—Breeds generally on grass lands or arable far from water. *Nest.*—A mere depression in ground, sometimes lined with a few bents or twigs; also in sand with fragments of shell round eggs. *Eggs.*—Usually 4, pyriform, ochreous or clay-colour, spotted, streaked and blotched with black and inky-grey shell-marks. Average of 31 eggs, 38.4×27.1 . Max.: 41.5×27 and 39.4×28 . Min.: 36.2×27.2 and 38×26.1 mm. *Breeding-season.*—April, May, and June. *Incubation.*—No details available.

FOOD.—Insects, worms and small crustacea recorded.

DISTRIBUTION.—*Great Britain.*—Six. Near Christchurch (Hants.) April, 1859. Tresco (Scilly Isles) Jan. 15, 1885 (Saunders, p. 545 and *Birds Hants.*, p. 287). Peterhead (Aberdeen) 1867 (W. P. Pycraft, *Ann. S.N.H.*, 1904, p. 247). Three Romney Marsh (Kent), April 21 and 22, 1908 (N. F. Ticehurst, *Brit. B.*, II, p. 169; *Bull. B.O.C.*, XXIII, p. 25). Two shot Winchelsea (Sussex) Nov. 12, 1915, a third seen and again on 16th (H. W. Ford-Lindsay, *Brit. B.*, IX, p. 212).

DISTRIBUTION.—*Abroad.*—Breeds in North America, from British Columbia south to central Mexico, winters in Central and South America, from California to Venezuela, Peru, and more rarely Paraguay and Chile, rare Bahamas, Bermuda. Said to have occurred Madeira.

CHARADRIUS APRICARIUS

378. *Charadrius apricarius oreophilus* (Meinertzhagen)—THE BRITISH GOLDEN PLOVER.

PLUVIALIS APRICARIUS OREOPHILOS A. C. Meinertzhagen, Bull. Brit. Orn. Club, XLII, p. 6 (1921—Brit. Is. Type Orkneys).

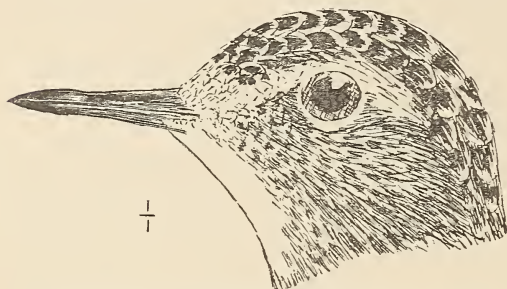
DESCRIPTION.—*Adult male and female.* *Winter.*—Fore-head whitish or cream, feathers with dusky centres; nape golden streaked dusky-brown; rest of upper-parts brown-black or dark sepia, feathers notched and tipped golden, upper tail-coverts barred same; superciliary stripe pale golden or cream more or less streaked brown; small patch below and line above eye white; ear-coverts,

cheeks and sides of neck golden streaked dusky ; chin white ; throat dusky-white, sometimes washed golden or drab and streaked dusky ; breast drab-grey, feathers fringed golden ; sides of upper-breast sepia notched and tipped golden ; flanks whitish, washed, barred and shaded drab-grey and tipped golden ; belly and vent white ; under tail-coverts white but long ones barred or marked dusky-brown and golden ; axillaries white ; under wing-coverts pale fawn ; tail-feathers sepia or black-brown barred and tipped golden, bars paler on outer tail-feathers and often incomplete ; primaries sepia with faint white tips, inner webs paler shading at base almost to white, most pronounced on inner primaries ; secondaries sepia with white bases, innermost as mantle ; primary-coverts sepia, tipped white ; rest of wing-coverts black-brown or sepia notched and edged golden. This plumage is acquired by complete moult July to Nov. *Summer. Male.*—The body-feathers (not all scapulars), occasionally central pair or an odd tail-feather, some innermost secondaries and coverts, some median and lesser coverts are moulted Feb. to May but not rest of tail-feathers or wings ; sometimes some winter body-feathers are retained. Coloration of upper-parts as winter but fore-head, lores and eye-stripe white more or less washed golden (sometimes spotted dusky-brown) ; sometimes a black-brown band at base of upper mandible faintly indicated ; ear-coverts and cheeks black-brown or dusky-brown, feathers with white bases imperfectly concealed and tinged golden, sometimes streaked and spotted dusky-brown and more or less washed golden ; sides of neck golden, barred and spotted black-brown (sometimes an ill-defined yellowish-white streak continued from eye-stripe down sides of neck to upper-breast) ; white patch at sides of upper-breast more or less plentifully intermixed with golden feathers spotted and marked sepia, extreme sides of upper-breast as sides of neck ; feathers of sides of body and flanks golden, some more or less white spotted and barred sepia, flanks more or less intermixed with black ; chin white, sometimes intermixed blackish ; throat, breast and belly black or black-brown more or less intermixed with white and golden feathers spotted sepia ; vent more or less white intermixed with golden feathers and an odd black feather ; lateral and long under tail-coverts golden barred dusky-brown ; rest of plumage as winter. *Female.*—As male but no indication of yellowish-white streak down side of neck and no white patch at sides of upper-breast in birds examined ; feathers of sides of neck and upper-breast sepia notched and tipped golden (sometimes intermixed with feathers tipped whitish) ; under-parts plentifully intermixed with white and golden feathers marked sepia.

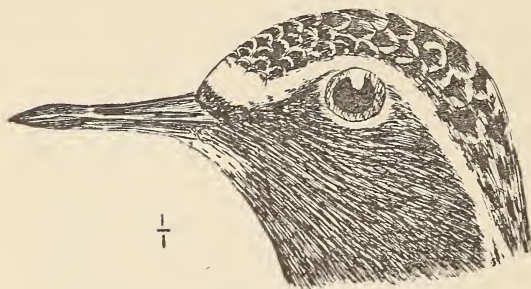
Nestling (Plate 9).—Fore-head and irregular streak (often ill-defined) at side of crown yellowish-white ; crown greenish or yellowish-golden irregularly mottled black ; nape dusky-black, down tipped yellowish-white or white ; rest of upper-parts, sides of body and back of thighs as crown ; back in some with small yellowish-white tufts ; tip of wing ashy-white ; eye-stripe and

streak from bill to nape as crown; patch under eye, chin and throat white; rest of under-parts greyish-white, down of upper-breast dusky-black at base.

Juvenile.—Upper-parts, wings and tail as adult but golden tips and notches of upper-parts and wing-coverts paler; ear-coverts and cheeks paler; throat, sides of neck and breast paler golden than adult and feathers with triangular dusky-brown spots and markings (feather-bases more or less greyish); flanks dusky-white more or less tinged golden and barred, streaked and marked (sometimes tipped) dusky; belly and vent white or dusky-white, sometimes barred or tipped dusky.



The British Golden Plover (*Charadrius apricarius oreophilus*).
Male adult, summer.



The Northern Golden Plover (*C. a. apricarius*).
Male adult, summer.

First winter.—Cannot be distinguished with certainty from adult winter, but in early winter may be told from freshly moulted adults by their faded and worn wing-coverts and by one or more worn scapulars and innermost secondaries but when wings of adults become worn this distinction does not hold. The juvenile body-plumage (? back and rump), some scapulars, some innermost

secondaries and apparently their coverts, some median and lesser coverts are moulted Sept. to early Nov. but not rest of wing-feathers and apparently not tail. *First summer*.—Indistinguishable from adult summer.

Measurements and structure.—♂ wing 188–192 mm., tail 60–76, tarsus 38–41, bill from feathers 22–25 (13 measured). ♀ wing 180–191, bill 21–25. Primaries: 1st minute, 2nd longest, 3rd 3–8 mm. shorter, 4th 14–20 shorter, 5th 22–32 shorter, 6th 34–45 shorter. Longest inner secondaries between 5th and 6th primaries. Tail short and square. Bill short, straight, slightly convex at tip; nasal groove extending along two-thirds of upper mandible. Three toes, outer and middle ones webbed up to about 1st joint, middle and inner slightly webbed at base.

Soft parts.—Bill black; legs and feet greenish-grey; iris brown.

CHARACTERS AND ALLIED FORMS.—For distinctions of *C. a. apricarius* see under that subspecies. White axillaries distinguish it from Grey and other Golden Plovers.

FIELD-CHARACTERS.—Whether under-parts are black (breeding dress) or white (winter) blackish gold-spangled upper-parts distinguish Golden Plover from other British birds, except young Grey Plover. White axillaries prevent confusion with latter and American and Asiatic Golden Plovers, but it is hardly possible to distinguish *C. a. oreophilos* from *C. a. apricarius* in the field. Nesting places on moors and mountains are deserted from autumn to spring; birds then resort to lowlands and coast, where they often consort with Lapwings, but they separate on rising, when speedy Golden Plovers with pointed sharp-angled wings and compact forms contrast strongly with broad-winged Lapwings. Common call in winter is a liquid, far-reaching “tlui,” but a warbling love-song “taludl-taludl,” a sobbing “tirr-pee-you,” and the long drawn “too-ee” are heard on breeding grounds.

BREEDING-HABITS.—Breeds on moorlands, showing preference for spots where little heather grows on the peat. *Nest*.—Depression in peaty soil, with scanty lining of heather-twigs, lichens, etc. *Eggs*.—Normally 4, frequently 3 in late layings and rarely 5, large and distinctly pyriform, varying from yellowish-stone (normal) to pale greenish or rich reddish-yellow, boldly blotched with brown-black. Average of 50 British eggs, 52.3×35.9 . Max. : 54.6×35.1 and 53×38 . Min. : 48.1×36 and 52.4×33.8 mm. *Breeding-season*.—From second week April onward, but most eggs laid end April and early May. Exceptionally to early July. *Incubation*.—Apparently by both sexes in turn (A. Taylor), but some observers report only males on eggs and others only females. Period 27th day in incubator (Evans); estimates of 16 to 21 days erroneous. Single brooded.

FOOD.—Variable, comprising insects, coleoptera (*Agriotes*, *Curculio*, *Sitones*, *Notiophilus*, etc.), orthoptera (earwigs and their larvæ), larvæ of lepidoptera (*Agrotis*, etc.), larvæ of diptera, and hymenoptera (*Formica*, etc.). Also earthworms, spiders, mollusca (*Sphærium*, *Limax*, *Vitrina*, *Littorina*, *Rissoa*, *Paludestrina* and *Alexia*), crustacea (small Isopods) and vegetable matter, including grasses, seeds (*Carex*, *Polygonum*, etc.), fragments of sea-weeds and moss and berries of moorland plants.

DISTRIBUTION.—*British Isles*.—Resident. Breeds sparingly moors Devon and Somerset, more plentifully Wales and its borders and north-east Yorks., and commonly Pennines and northwards throughout Scotland and its islands. In Ireland on mountains many districts, as well as bogs in western Connaught. To what extent breeding-birds are migrants is uncertain, but they begin to leave breeding-haunts for coastal regions early Aug. and in autumn and

winter are widely distributed on low-lying marshes and fields returning to moors March and April, sometimes as early as mid-Feb. Probably takes part in winter weather-movements.

DISTRIBUTION.—*Abroad.*—Breeds north and west Jutland and Laeso (island in Cattegat) and probably Germany, but exact distribution at present uncertain.

379. *Charadrius apricarius apricarius* L.—THE NORTHERN GOLDEN PLOVER.

CHARADRIUS APRICARIUS Linnæus, Syst. Nat., ed. x, i, p. 150 (1758—Oeland [island near Sweden] and America: the latter erroneous, ex Edwards).

Charadrius pluvialis Linnæus, Yarrell, III, p. 271; Saunders, p. 547.

DESCRIPTION.—*Adult male and female.* *Winter.*—Indistinguishable from *C. a. oreophilos*. *Summer. Male.*—Moult as in *C. a. oreophilos* after which it differs from that form as follows: upper-parts when series compared paler, yellow markings larger and paler; narrow black-brown band across fore-part of fore-head; behind this a broad white band which extends over each eye, down sides of neck and breast, where it widens out forming a clean white patch on each side of breast; flanks white more or less barred brown-black and intermixed with black, not intermixed with golden feathers as in *C. a. oreophilos*; lateral and long under tail-coverts (sometimes most) white irregularly marked black-brown slightly suffused golden; lores, ear-coverts, cheeks and throat black-brown; under-parts more uniform black or black-brown; chin whitish or dusky-black, feathers with white bases; vent more or less black. *Female.*—As male but black-brown band on fore-part of fore-head narrower, and sometimes ill-defined or absent; ear-coverts and cheeks golden, feathers spotted and tipped black-brown, or with black tips and broad imperfectly concealed white bases, sometimes throat more or less intermixed with white feathers or white feathers tinged golden; white band down sides of neck narrower and sometimes ill-defined (in one bird white patch at side of breast intermixed golden spotted sepia); flank-feathers sometimes tinged golden.

Juvenile.—Apparently not distinguishable.

Measurements.—♂ wing 181–194 mm., tarsus 37–42, bill from feathers 21–24 (16 measured). ♀ wing 182–193 (one worn 177), bill 21–26 (10 measured).

BREEDING-HABITS.—Similar to those of British race. *Eggs.*—Also similar but Rey's average for 26 is rather less, 51.4×34.1 . Max.: 54.7×36.2 . Min.: 48.2×33.3 mm. *Breeding-season.*—Varies according to latitude, seldom before latter half May in high north.

FOOD.—Includes insects; coleoptera (*Melolontha* larvæ, *Tenebrio*, *Halitica*, etc.), larvæ of diptera, etc. Also earthworms, small mollusca and vegetable matter including seeds of *Polygonum*, *Scleranthus*, etc., and berries of *Rhamnus*, *Vaccinium*, *Oxycoccus*, and *Empetrum*.

DISTRIBUTION.—*British Isles*.—The winter-visitors and passage-migrants (mid-Aug. to mid-Nov. and mid-March to end May), are probably of this form. Weather-movements both of arrival and departure Nov.—Feb.

DISTRIBUTION.—*Abroad*.—Northern Europe (most probably north to Bear Island, where one specimen obtained), Færoes and Iceland, occasional Greenland and west Siberia; in winter south to north Africa, Azores, Madeira, and Canary Islands, and in Asia as far as Aden and Sind. (In Africa in Somaliland, statements of occurrences in Gabun and South Africa require confirmation.)

CHARADRIUS DOMINICUS

380. *Charadrius dominicus dominicus* Müll.—THE AMERICAN GOLDEN PLOVER.

CHARADRIUS DOMINICUS P. L. S. Müller, Natursystem, Suppl., p. 116 (1776—Santo Domingo. Ex Brisson).

Charadrius dominicus P.L.S. Müller, Saunders, p. 549 (part); *C. fulvus* Gm., Yarrell. III, p. 276 (in text).

DESCRIPTION.—*Adult male and female*. *Winter*.—Fore-head cream, feathers with dusky centres; crown dark sepia, feathers faintly tipped golden; nape ash-brown; mantle and scapulars fulvous-brown, feathers with slight golden margins; back, rump and upper tail-coverts sepia, feathers fringed golden; eye-stripe white streaked fulvous; ear-coverts dusky; sides of neck and cheeks white, streaked dusky; chin and throat white, latter streaked fulvous; breast and flanks pale fulvous edged white; belly, vent and under tail-coverts white, some of latter shaded fulvous; axillaries and under wing-coverts fulvous-grey; tail sepia with indications of darker brown barring and notched and tipped white; primaries, their coverts and secondaries as in *C. apricarius* but innermost secondaries fulvous-brown shaded with bars of darker brown and faintly tipped white; greater and median coverts fulvous-brown with narrow dusky-white tips; lesser coverts sepia tipped golden. This plumage is acquired by complete moult Aug. to Feb., birds with primaries in quill occur in Dec., Jan., and even Feb., and moult of remiges appears to take place in late autumn and winter.

Adult male. *Summer*.—The body-feathers (not all scapulars or all feathers of back and rump), occasionally an odd tail-feather and exceptionally whole tail, innermost secondaries and coverts, some median and lesser coverts are moulted March to June, but not rest of wings or tail-feathers. Fore-head white; crown black, feathers notched golden; upper-parts black, notched and broadly barred and tipped golden; broad white superciliary bands terminate in small white patches on sides of breast; ear-coverts, cheeks, sides of neck and remaining under-parts black; under tail-coverts black barred or marked white, lower ones whitish; axillaries and under wing-coverts as winter; tail-feathers as winter but occasionally one or two with ill-defined golden bars; wing as winter but

old coverts faded and worn ; new innermost secondaries, median and lesser coverts black, broadly barred and notched golden and tipped and notched cream. *Female*.—As male but black of under-parts usually intermixed with white ; under tail-coverts white with brown or black-brown markings. N.B.—Sometimes some winter body-feathers are retained.

Nestling.—(Not examined.)

Juvenile.—Resembles adult winter but upper-parts brown-black or dark sepia notched and tipped golden much as in juvenile *C. apricarius* ; eye-stripe, ear-coverts, cheeks and sides of neck white or pale golden streaked dusky ; chin white ; throat cream or pale yellow heavily streaked dusky ; breast fulvous, feathers notched at tip pale yellow or cream and streaked or barred darker fulvous or sepia ; flanks white or pale fulvous and tipped and barred darker and barred white or cream ; belly washed pale fulvous and sometimes barred darker ; remaining under-parts as adult ; tail-feathers sepia indistinctly barred darker and notched and tipped golden ; innermost secondaries and coverts as mantle ; median and lesser coverts black-brown or sepia, slightly notched creamy-white or golden.

First winter. *Male and female*.—Cannot be distinguished with certainty from adult winter. Juvenile body-plumage (not all scapulars), some innermost secondaries and apparently coverts, median and lesser coverts, are moulted in autumn and winter but not rest of wings and apparently not tail. N.B.—Two Jan. birds examined were still in juvenile plumage.

Measurements and structure.—♂ wing 177–190 mm., tail 61–69, tarsus 41–43, bill from feathers 21–24 (12 measured). ♀ wing 171–190, bill 22–24. Primaries : 1st minute, 2nd longest, 3rd 4–10 mm. shorter, 4th 13–21 shorter, 5th 24–31 shorter, 6th 35–46 shorter. Other structure as in *C. apricarius*.

Soft parts.—Bill black ; legs and feet greyish-black ; iris brown.

CHARACTERS AND ALLIED FORM.—For differences of *C. d. fulvus* see under that form. Distinguished from *C. apricarius* by fulvous-grey axillaries.

FIELD-CHARACTERS.—Not only smaller and more slender than Grey Plover, but proportionately longer winged, with a swifter, more buoyant flight. Under-wing, entirely grey, is more strikingly different from the white, with black axillary patch of Grey Plover, than one would suppose. Favourite feeding ground dry pastures or downs. Flight-note a far-reaching “quee-i-i-a,” with a quaver in middle and falling at end. Less mellow and whistled than that of Grey Plover but suggesting that call reversed, and with the thrilling Plover quality. (J. T. Nichols.)

BREEDING-HABITS.—Nests on tundra. *Nest*.—A mere depression on ground generally with a few dead leaves or grass as lining. *Eggs*.—Normally 4, but 5 once recorded, decidedly smaller than those of European species, and less richly marked, having as a rule a paler

ground. Average of 22 eggs, 49.2×33.2 . Max. : 54×33.2 and 49.3×34.5 . Min. : 46.5×34.3 and 46.7×32 mm. *Breeding-season*.—Latter part June and early July. *Incubation*.—Apparently chiefly by female but Murdoch states that both sexes were shot from nest and both had incubation patches. Single brooded.

Food.—Little definitely recorded. Probably main food worms and insects. Hatch records orthoptera (grasshoppers) and insect larvæ from arable land, and Clarke an instance of young fish (*Sicydium*) being eaten.

DISTRIBUTION.—*British Isles*.—Four or five. [Leadenhall Market, autumn 1882.] Near Perth Aug. 3, 1883* (J. G. Millais, *Zool.*, 1886, p. 26). Belmullet (Mayo) Sept. 13, 1894 (E. Williams, *Irish Nat.*, 1894, p. 224 ; Saunders, p. 549). Shell Haven Point (Essex) Aug. 6, 1896* (H. Nunn, *Zool.*, 1897, p. 330). Rye (Sussex) Sept. 22, 1916 (J. B. Nichols, *Brit. B.*, XI, p. 45.)

DISTRIBUTION.—*Abroad*.—Breeds in arctic north America, west to northern Alaska, winters in Brazil and Argentina, passing down Atlantic Ocean, returning through Mississippi valley, and occurring, on migration, in Greenland and Bermudas. Once on Heligoland, 1847. Replaced in north-east Asia and at Point Barrow in N. Alaska by *C. d. fulvus*.

381. *Charadrius dominicus fulvus* Gm.—THE ASIATIC GOLDEN PLOVER.

CHARADRIUS FULVUS Gmelin, *Syst. Nat.*, I, ii, p. 687 (1789—Tahiti).
Charadrius dominicus P. L. Müller, Saunders, p. 549 (part).

DESCRIPTION.—*Adult male and female*. *Winter*.—Distinguished from *C. d. dominicus* by black-brown upper-parts, feathers notched, tipped and barred yellow-gold (not such a green-gold as in *C. aprincarius*) and by having under-parts as follows : chin and throat buff-yellow, throat sometimes streaked brown ; ear-coverts brownish ; cheeks and sides of neck creamy-yellow streaked brown ; breast fawn-brown, feathers with creamy or yellowish edges ; flanks white with median brown streaks, sometimes washed fulvous and tipped golden ; remaining under-parts including axillaries and under wing-coverts as in *C. d. dominicus* ; tail-feathers pale sepia, barred darker and washed white or yellow, yellow most marked on central pair ; wing as in *C. d. dominicus*, but innermost secondaries and coverts, median and lesser coverts notched and edged cream-yellow or golden. This plumage is acquired by complete moult end of Aug. to Feb. N.B.—In one March specimen autumn moult was not yet completed, 1st and 2nd primaries being in quill and body in full moult, while in several dated Feb. 2nd or 3rd primary was in sheath. *Summer*.—The body-feathers (not all scapulars), central pair of tail-feathers (sometimes three central pairs), some inner-

* Apparently *C. d. dominicus* but possibly *C. d. fulvus*.

most secondaries and coverts, some median and lesser coverts but not rest of wings or tail are moulted March to May (some winter body-feathers sometimes retained). Differs from *C. d. dominicus* in having upper-parts more plentifully spangled golden and under tail-coverts white in both sexes, barred, tipped or irregularly marked black; in some males under-parts are interspersed with new, or worn white feathers; in female under-parts are of a browner black, some feathers tipped white and more or less plentifully intermixed with white feathers. N.B.—Six summer birds examined had apparently moulted into winter instead of summer plumage; in one (April) growing feathers were like those of winter. This occurs in other waders.

Nestling.—Apparently identical with nestling *C. a. oreophilus* but yellow of upper-parts rather lighter; eye-stripe and streak from bill to nape below eye yellowish-white irregularly mottled black. (Only one indifferent skin examined.)

Juvenile. Male and female.—Like juvenile *C. d. dominicus* but upper-parts notched and tipped with paler golden; breast golden, feathers streaked fulvous; flanks white streaked fulvous, sometimes notched and tipped golden; belly and vent white, sometimes with feathers notched golden; tail-feathers and wing-coverts as in *C. d. dominicus*.

First winter. Male and female.—Not to be distinguished with certainty from adult. The juvenile body-plumage (not all the scapulars), innermost secondaries and coverts, some median and lesser coverts but apparently not tail and not rest of wings are moulted Sept. to Jan.

Measurements and structure.—♂ wing 165–174 mm., tail 59–64; tarsus 39–46, bill from feathers 21–27 (12 measured). ♀ wing 158–175, bill 22–26. Primaries: 1st narrow and pointed and about half longest primary-covert, 2nd longest, 3rd 3–8 mm. shorter, 4th 12–16 shorter, 5th 21–30 shorter, 6th 35–42 shorter. Other structure as in *C. apricarius*.

Soft parts.—Bill black; legs and feet slate-grey; iris dark brown.

BREEDING-HABITS.—Breeds on the open tundra. *Nest*.—A mere hollow in ground, with a few broken bits of moss and lichen by way of lining. *Eggs*.—Normally 4, smaller than those of European Golden Plover, and ground paler, but otherwise similar. Average of 7 eggs, 48.6×34.4 . Max.: 49.7×34.5 and 48.3×35.6 . Min.: 47.5×33.9 and 48.1×33.6 mm. *Breeding-season*.—Latter half June and early July. Single brooded.

FOOD.—Worms, small crustacea, insects, and small mollusca.

DISTRIBUTION.—*Great Britain*.—Some fifteen. [Leadenhall Market Dec., 1874, said from Norfolk.] Loch Stenness (Orkneys) Nov., 1887 (J. G. Millais, *Field*, vol. 70, p. 907, 10.XII.1887; Saunders, p. 549). Epsom Race-course (Surrey) Nov. 12, 1870 (J. A. Bucknill, *Birds Surrey*, p. 283). Party of five or six (three shot) Wartling

Marsh, nr. Hurstmonceux (Sussex) April 23, 1914 (T. Parkin, *Brit. B.*, VIII, p. 52). Several shot (three preserved and wing of another sent to Witherby) Romney Marsh (Kent) Sept., 1915 (H. W. Ford-Lindsay, *op. c.*, IX, p. 212).

DISTRIBUTION.—*Abroad*.—Breeds in arctic Asia and western Alaska, winters in Pacific Ocean, south to New Zealand, also in Chile. Has occurred as vagrant in Poland, Norway, on Heligoland (three), Malta (two), in south Spain and (according to Loche) in Algeria (one). Replaced by *C. dominicus dominicus* in America.

Genus SQUATAROLA Cuv.

SQUATAROLA Cuvier, Règne Anim., I, p. 467 (1816—Type by tautonymy, *Tringa squatarola*).

Closely allied to large spotted species of genus *Charadrius*, *apricarius* and *dominicus*, but a small hind toe with claw is present. Though this is apparently of no value and there is probably no reason to regard it as a character widely separating it from latter species, it is a convenient one to distinguish it as a special genus, and we follow this universal custom. Only 1 species in 2 subspecies.

SQUATAROLA SQUATAROLA

382. *Squatarola squatarola squatarola* (L.)—THE GREY PLOVER.

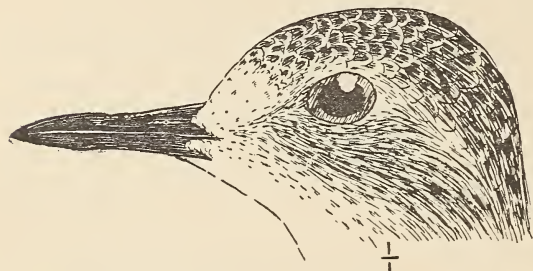
TRINGA SQUATAROLA Linnæus, Syst. Nat., ed. x, i, p. 149 (1758—Europe. Restricted typical locality : Sweden).

Squatarola helvetica (Linnæus), Yarrell, III, p. 278 ; Saunders, p. 551.

DESCRIPTION.—*Adult male and female*. *Winter*.—Fore-head greyish-white ; crown, nape, mantle, scapulars, back and rump ash-brown, feathers tipped white and shaded subterminally black-brown, scapulars also notched white and obscurely barred black-brown ; upper tail-coverts white, more or less barred ash-brown ; eye-stripe white, streaked dusky-brown ; ear-coverts dusky-brown faintly tipped white ; cheeks and throat white streaked dusky-brown ; chin white ; feathers of breast pale ash-brown, edged white, or white, marked and shaded ash-brown ; flanks white more or less suffused ash-brown ; belly and vent white ; under tail-coverts white, outer ones with irregular brown markings ; axillaries black ; under wing-coverts white ; tail-feathers barred white and black-brown, bars decreasing and irregular on outer pairs which are usually mostly white, central pair usually suffused ash-brown ; primaries black-brown with white shafts, about basal three-fourths of inner webs white, from 6th inwards with white on outer webs and tips ; secondaries ash-brown tipped white, bases of inner webs white, innermost as scapulars ; primary-coverts black-brown, tipped white ; greater coverts ash-brown edged all round and slightly notched white ; median and lesser coverts ash-brown edged and notched white, innermost median coverts tipped white and

notched same at sides. This plumage is acquired by complete moult July to Dec.

Adult male. Summer.—The body-feathers (not all scapulars or all feathers of back and rump), usually tail-feathers, some innermost secondaries and coverts, some median and lesser coverts are moulted Feb. to May, but not rest of wings; a few winter body-feathers are sometimes retained on upper- and under-parts especially in females. Fore-head white; crown and nape sepia more or less obscured by broad white edges of feathers; mantle, scapulars, new feathers of back and rump dark sepia, feathers broadly tipped white and scapulars notched white; upper tail-coverts white, irregularly



The Grey Plover (*Squatarola s. squatarola*) juvenile, and a worn juvenile inner secondary.



barred black-brown; a white band from fore-head, over eye to breast forming a large white patch on side of breast; vent white; under tail-coverts white, outer ones irregularly barred or marked brown-black; cheeks, sides of neck and remaining under-parts black; under wing-coverts and tail as winter; wing as winter but innermost secondaries and coverts and new wing-coverts as scapulars. *Female.*—As male but upper-parts and wing-coverts narrowly tipped white, under-parts browner-black and plentifully interspersed with white; under tail-coverts white irregularly marked brown.

Nestling.—Like nestling *C. a. oreophilos* but black and yellow of crown and upper-parts duller; nape white; under-parts purer white than in *C. a. oreophilos*.

Juvenile. Male and female.—Fore-head and lores white, more or less spotted sepia; crown, nape, mantle, scapulars, back and rump black-brown or sepia, feathers notched and edged pale gold or cream; upper tail-coverts white with obsolete bars of dusky-brown, washed golden at tip and with faint terminal dusky lines; ear-coverts, cheeks and sides of neck white, sometimes suffused golden streaked dusky; chin white; throat, breast and sides of body white or light buff, sometimes washed pale golden, feathers with median streaks and shadings or barrings of sepia and dusky-

brown, some with faint terminal dusky-brown tips; flanks white with dusky-brown shafts and tips and sometimes marked and shaded same; under tail-coverts white, some with brown borders; rest of under-parts as adult; tail-feathers washed golden and barred white and sepia, bars decreasing towards outer feathers which are more or less white; wing as adult but innermost secondaries and coverts as mantle; greater coverts more narrowly edged white than in adult, white edge incomplete in centre of tip of feather and notches larger and more pronounced than in adult; median and lesser coverts pale sepia or dusky-brown, tipped and notched creamy or golden.

First winter. Male and female.—Like adults but distinguished by creamy or golden tips and notches of retained juvenile median coverts (especially innermost), by pale golden tips to feathers of rump, fading later to white, and by jagged spear-like shape of one or more very abraded juvenile innermost secondaries in which cream coloured notches wear away but black-brown parts resist. The juvenile body-plumage (not all scapulars and not feathers of back and rump), occasionally tail, some innermost secondaries and coverts, some median and lesser coverts are moulted Sept. to Jan. but not rest of wings. N.B.—One dated March was still moulting into winter plumage. *First summer.*—Apparently like adult and only to be distinguished by innermost median coverts. N.B.—Only one male and one female examined and in both a good many winter body-feathers had been retained. Moults apparently as adult; in one tail-feathers were old and worn, in the other, one central tail-feather appeared to be new.

Measurements and structure.—♂ wing 182–202 mm., tail 69–82, tarsus 43–50, bill from feathers 27.5–30 (12 measured). ♀ wing 186–202, bill 27–30. Primaries: 1st minute, 2nd longest, 3rd 5–9 mm. shorter, 4th 17–20 shorter, 5th 29–33 shorter, 6th 42–49 shorter. Longest inner secondary between 4th and 6th primaries. Tail square and short. Bill about as long as head, straight, stout, convex at tip, nasal groove extending almost to tip. Four toes, hind one diminutive and sometimes absent, middle and outer ones webbed at base, middle and inner slightly webbed, claw of middle toe dilated on inner side.

Soft parts.—Bill black; legs and feet ash-grey; iris blackish.

CHARACTERS AND ALLIED FORMS.—*S. s. hypomelæna* (N.E. Siberia, Alaska) is larger (bill 29–34.5 mm. Hartert); *S. s. cynosuræ* (N. America) said to be smaller, is doubtful. Distinguished in all plumages from Golden Plovers by black axillaries.

FIELD-CHARACTERS.—On spring and autumn passage and to lesser extent during winter is not uncommon on mud-flats and estuaries, but rare inland. Compact bullet-headed bird, similar in form to Golden Plover, but rather larger, and adult readily recognized by silver, instead of gold, spangles on upper-parts. Young have some yellow, but axillaries are black. Call-note resembles that of Golden Plover, but is sharper and lacks its peculiar liquid quality.

BREEDING-HABITS.—A tundra-haunting species. *Nest.*—A mere depression in mossy ground, lined with bits of mosses and stalks of lichen, etc. *Eggs.*—Normally 4, pyriform, closely blotched and spotted with black on pale stone-colour or greyish-olive ground and a few ashy shellmarks; lacking the warm, rich appearance of Golden Plover's eggs, and not unlike light coloured eggs of Lapwing. Average of 40 eggs, 51.6×35.9 . Max.: 55.2×35.6 and 50.7×38 . Min.: 45.7×34.7 and 51.9×34 mm. *Breeding-season.*—Latter half June and early July in N. Russia and Kolguev. *Incubation.*—By both sexes, as both females and males have been shot from eggs. Period not known. Single brooded.

FOOD.—Earthworms, small fresh and salt water mollusca, such as small periwinkles and water-snails, insects, including coleoptera (*Bembidium*, *Aphodius*, *Harpalinus* and *Curculionidæ*), hemiptera, and probably diptera. Also seeds of plants.

DISTRIBUTION.—*British Isles.*—Winter-visitor and passage-migrant (end July—early Nov., but chiefly Sept. to mid-March—early June and a few throughout summer). Generally distributed (usually small parties) east and south coasts England, less frequent west coast and Scotland, where usually very scarce north of Solway on west and north of Ness on east; also rare Orkneys, Shetlands, and Hebrides. In Ireland visits all coasts, but scarce south. Rare vagrant inland.

DISTRIBUTION.—*Abroad.*—Breeds in tundras of arctic Europe, W. Siberia and Siberian Islands, Greenland, and eastern America, passes through subarctic regions and winters from coasts of Europe to S. Africa, Madagascar and Seychelles, W. Indies and S. America. Replaced by closely allied races in north-east Siberia (which migrates to Malayan Archipelago and India to Australia), and perhaps parts of N. America.

Genus CHETTUSIA Bp.

CHETTUSIA Bonaparte, Iconogr. Faun. Ital., Uccelli, Introd., pp. 12, 115 (1841—Monotype *C. gregaria*).

Somewhat resembling *Vanellus* but has no crest. Bill black, slender. 1st and 2nd developed primaries about equal and longest, 3rd little shorter. Tarsus longer than in *Vanellus*. Hind toe distinct though small. 2 species, only one casual in British Isles.

CHETTUSIA GREGARIA

383. *Chettusia gregaria* (Pall.)—THE SOCIABLE PLOVER.

CHARADRIUS GREGARIUS Pallas, Reise d. versch. Prov. d. Russ. Reichs, I, p. 456 (1771—Volga steppes).

Vanellus gregarius (Pallas), Saunders, p. 553.

DESCRIPTION.—*Adult male and female.* *Winter.*—Fore-head and broad eye-stripe which meets on nape, light buff or cream; crown olive-brown, feathers narrowly tipped warm buff, those of fore-part of crown usually with small black spots or streaks, some on hinder

crown similarly spotted ; nape, mantle and scapulars olive-drab, feathers broadly fringed ochraceous-buff ; lower scapulars light drab ; sides of back and rump and upper tail-coverts white ; centre of back and rump drab, feathers faintly edged warm buff ; patch under eye white ; spot in front of eye and streak behind eye black ; lores and cheeks light buff, narrowly streaked pale olive-brown ; chin and throat white ; feathers of sides of neck washed palest drab with broad buff fringes and more or less narrowly streaked olive-brown ; fore-neck white suffused palest drab, sometimes narrowly streaked olive-brown ; breast suffused palest drab, feathers tipped white or light buff, some with V-shaped markings, shadings or narrow streaks of olive-drab or olive-brown ; remaining under-parts white ; tail-feathers white with broad subterminal black band decreasing in width towards outer feathers, two outer pairs mostly white ; primaries black, white at utmost base, inner ones usually with white or pale drab bases extending towards tip of inner web which is sometimes narrowly tipped white ; secondaries white, inner ones washed pale drab on outer or both webs, innermost like mantle ; primary-coverts black ; greater coverts pale drab, broadly tipped white ; median and lesser coverts pale olive-drab, tipped light or ochraceous-buff. This plumage is acquired by complete moult July to Dec. N.B.—Buff edges on upper-parts and to some extent black spots on crown are lost by abrasion.

Adult male. Summer.—The body-feathers (not all scapulars), occasionally central pair of tail-feathers, usually most innermost secondaries and their coverts, but apparently not median nor lesser coverts are moulted in spring ; sometimes some winter body-feathers are retained. Fore-head and eye-stripes white, sometimes washed light buff on nape ; crown black glossed deep blue ; nape, mantle and scapulars light drab ; rest of upper-parts as winter ; lores black ; a streak from posterior corner of eye below eye-stripe black ; ear-coverts, cheeks and throat warm buff ; chin white ; sides of neck light drab, feathers faintly tipped warm buff ; breast pale hair-brown ; flanks white ; belly bluish-black ; vent chestnut interspersed with white ; remaining under-parts as winter ; tail and wing as winter, but innermost secondaries and coverts as mantle, median and lesser coverts faded and except innermost with buff edges worn. *Female.*—As male but sometimes duller, some birds examined had belly hair-brown instead of black, others with belly and vent white with only a few new black feathers on belly and new chestnut ones on vent. N.B.—One (♂ May, S. Russia) with inner primaries of both wings in quill.

Nestling.—Resembling nestling *V. vanellus* but crown and upper-parts mottled light buff and black instead of light drab and black and without black pectoral gorget. Fore-head light buff ; a median black-brown line from middle of fore-head to crown ; crown mottled light buff and black ; nape white ; remaining upper-parts mottled black and light buff, down with long tips of sooty-brown and buff ; a black-brown band along wing, tip of wing white ;

ear-coverts and moustachial streak white mixed with black; cheeks, chin and throat white; sides of upper-breast dusky-black, down tipped white and buff, remaining under-parts white.

Juvenile. Male.—(No female examined.) Fore-head cream-buff; crown olive-brown, many feathers heavily spotted blue-black, and notched at sides light buff; nape olive-brown, feathers tipped sandy-buff; mantle, scapulars, back and rump olive-brown, feathers edged sandy-buff and some shaded blackish olive-brown subterminally; throat and breast cream, heavily streaked and with V-shaped marks or central shadings of sepia; rest of upper- and under-parts as adult winter; tail and wing as adult but innermost secondaries and coverts as mantle, median and lesser coverts olive-brown broadly edged sandy-buff.

First winter.—As adult but distinguished by worn sandy edges to retained olive-brown juvenile wing-coverts (least abraded on innermost median coverts). The juvenile body-feathers (not all scapulars), occasionally central tail-feathers, some innermost secondaries and coverts, some median and apparently some lesser coverts are moulted in late autumn but not rest of wings or tail-feathers. *First summer.*—Moult as in adult but sometimes tail and some median and lesser coverts appear to be moulted. Coloration as adult and only to be distinguished by retained juvenile wing-coverts as in first winter.

Measurements and structure.—♂ wing 198–211 mm., tail 74–90, tarsus 56–62, bill from feathers 26–30.5 (12 measured). ♀ wing 199–212, bill 27–30 (6 measured). Primaries: 1st minute, 3rd longest, 2nd equal or 3–6 mm. shorter, 4th 4–9.5 shorter, 5th 9–17.5 shorter, 6th 17–27 shorter. Longest inner secondary between 5th and 8th primaries. Tail square. Bill straight and slender, slightly convex at tip. Tarsus covered with hexagonal scales immediately below joint, rest scutellated anteriorly. Four toes, middle and outer ones webbed almost to first joint and middle and inner very slightly webbed.

Soft parts.—Bill black; legs and feet black; iris brown.

CHARACTERS.—No subspecies. Distinguished from its near allies by white or light drab marks on inner webs of black inner primaries and from other British waders by drab upper-parts and white secondaries.

BREEDING-HABITS.—A steppe-haunting species. *Nest.*—A slight hollow lined with dry grass and sheltered by tuft of heath. *Eggs.*—4, occasionally 5, not unlike those of Lapwing, ovate or pyriform, freely spotted or blotched with black-brown and shellmarks of ash-colour on stone to warm buff ground. Variety marked with fine spots of ash-brown on greyish or greenish ground. Average of 55 eggs, 46.5×33.8. Max.: 49.3×34.6 and 47.3×35.8. Min.: 42.3×33.2 and 46×31.7 mm. *Breeding-season.*—From mid-May onward. Incubation shared by both sexes. Period 18–21 days after laying of last egg (Menzbier). Single brooded.

FOOD.—Chiefly insects ; coleoptera and larvæ, orthoptera (grass-hoppers), cicadæ, etc. Also spiders.

DISTRIBUTION.—*British Isles*.—Very rare vagrant. One near St. Michael's-on-Wyre (Lancs.) autumn, about 1860 (Saunders, p. 553). Female near Navan (Meath) Aug. 1, 1899 (E. Williams, *Irish Nat.*, 1899, p. 233). Female out of flock of six, Romney Marsh (Kent), May 3, 1907 (C. B. Ticehurst, *Bull B.O.C.*, xix, p. 85). Four (another said to have escaped) near Winchelsea (Sussex), May 25–27, 1910 (A. F. Griffith, *op. c.*, xxvii, p. 28 ; *cf. Brit. B.*, i, p. 57, ii, p. 150, iv, p. 256). Three near same place May 9, 11 and 18, 1914 (J. B. Nichols, *Brit. B.*, ix, p. 156).

DISTRIBUTION.—*Abroad*.—Breeds from south Russian steppes to Turkestan, the Altai and west Siberia, south in winter to north-east Africa and India. Casual in Poland, Greece, Hungary, Italy, south France, and near Cadiz.

Genus VANELLUS Briss.

VANELLUS Brisson, Orn., i, p. 48 (1760—Type according to v, p. 94, by tautonymy *Tringa vanellus* L.).

Differs in all plumages (except down) from all other British genera by long occipital crest. Bill shorter than head, straight, hind toe present, small. Wing very broad, see under species. Only 1 species.

VANELLUS VANELLUS

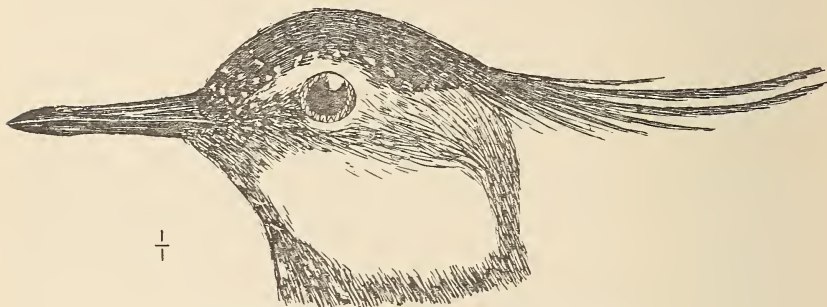
384. *Vanellus vanellus* (L.)—THE LAPWING.

TRINGA VANELLUS Linnæus, Syst. Nat., ed. x, i, p. 148 (1758—Europe, Africa. Restricted typical locality : Sweden).

Vanellus vulgaris Bechstein, Yarrell, iii, p. 283 ; Saunders, p. 555.

DESCRIPTION.—*Adult male. Winter*.—Fore-head brown-black, feathers faintly edged light buff ; crown and crest black, crown with brownish tinge and glossed green ; light buff eye-stripe, with some black spots and marks, extends from base of bill over and beyond eye to nape encircling hinder crown ; rest of nape ash-brown tinged green ; mantle metallic-green, feathers with faint sub-terminal brownish edgings and mostly tipped warm buff ; scapulars same but with broader warm buff edges and some varied with magenta ; lower scapulars brown-black tinged green ; centre of back and rump dark ash-brown tinged green especially where rump borders upper tail-coverts, sides of back and rump white ; upper tail-coverts auburn ; in front of eye a small black patch widening out below eye and forming an irregular black patch on cheeks (feathers with white bases often imperfectly concealed) from which a black band passes across ear-coverts ; line below eye and region immediately behind eye white (sometimes marked black and washed warm buff towards nape) ; rest of cheeks and sides of neck white,

more or less washed buff; chin and throat white (sometimes with some dusky-black spots); gorget black with metallic-green sheen, some feathers faintly edged white or light buff, those bordering lower-breast with broad white fringes; under tail-coverts pink-cinnamon; rest of under-parts white; under primary-coverts and bastard-wing black; tail-feathers with basal halves white, distal halves black, tipped light buff or white, outer pair white with an irregular and variable black or dusky-brown mark towards tip; primaries black, 2nd, 3rd and 4th pale smoke-brown towards tip, sometimes 5th with similar patch on outer web; secondaries black, inner webs white at base, those next innermost slightly glossed violet or purplish-green on outer webs, innermost and coverts as mantle; primary-coverts and bastard-wing black; greater coverts purplish-black, inner webs brown-black, inner greater coverts more or less



The Lapwing (*Vanellus vanellus*). Female adult, summer.

metallic-green narrowly tipped buff; median coverts metallic-green mostly with a violet-purple sheen, a few with sandy-buff tips; lesser coverts deep violet-purple or metallic-green glossed deep violet-purple, innermost with brownish bases often ill-concealed. This plumage is acquired by complete moult Aug. to Nov. *Summer*.—Feathers of head, some of nape, throat and breast, apparently some scapulars, sometimes some innermost secondaries, some median and lesser coverts but not rest of body-plumage and apparently not tail and not wings are moulted Feb. to May. Coloration as winter but crown deep black, glossed green; eye-stripe white, feathers more or less marked black; collar on nape whiter; lores, patch in front of and below eye, band across ear-coverts, chin and throat deep black (sometimes feathers in front of eye with white bases and sometimes these black areas intermixed with one or two worn white winter feathers); upper-parts and wing-coverts abraded and lacking buff edges.

Adult female. Winter.—As male but fore-head and crown browner and with less green gloss; crest shorter; mantle, scapulars and inner secondaries rather more olive-green; patch in front of and below eye browner black and less extensive; median coverts

only slightly glossed violet ; lesser coverts dark green very slightly glossed violet or metallic-green. Freshly moulted females appear to have more numerous light buff or white edges to feathers of black gorget than freshly moulted males. *Summer*.—As winter but crown intermixed with new black feathers glossed green ; eye-stripe white or light buff streaked black-brown and dusky ; lores, patch in front of eye, patch below eye and ear-coverts black-brown and more or less intermixed with white ; chin and throat intermixed with new black feathers.*

Nestling (Plate 8).—Down on fore-head light drab with an indistinct black median line ; crown mottled light drab and black ; an irregular black band on hinder-crown but not extending to eye ; nape white ; remaining upper-parts including tip of wings mottled light drab, black and sandy-buff ; ear-coverts and cheeks mottled black and light drab ; a black line from base of upper mandible to eye and one below eye (sometimes absent or indistinct) ; chin and throat white ; breast white with a black pectoral gorget ; rest of under-parts white.

Juvenile. Male and female.—Resembling adult winter female. Crown dark sepia, feathers edged light buff, very short crest black, faintly tipped buff ; feathers of nape below nuchal collar edged warm buff ; mantle and scapulars dull green, more or less tinged dull brown, feathers edged warm buff, some notched and irregularly marked same towards tip ; feathers of rump with narrow buff tips ; upper-tail-coverts as adult ; patch in front of eye smaller ; patch below eye less extensive and browner, many feathers with extensive buff or white bases ; streak across ear-coverts narrower ; gorget narrower, dull brown-black faintly glossed dull green, feathers tipped light buff or white and with ash-brown bases often ill-concealed ; under tail-coverts light pink-cinnamon ; tail-feathers as adult but outer pair often entirely white or with only a small dusky-black mark towards tip, remainder tipped warm buff ; wing as adult but innermost secondaries and coverts as mantle ; primary and greater coverts dull black with little or no gloss, greater coverts narrowly tipped warm buff ; median coverts dull or metallic-green, broadly edged warm buff, and mostly notched same towards tip ; lesser coverts dull brownish-green, some with metallic-green sheen and mostly with warm buff tips. N.B.—Buff edges are more or less lost by abrasion. Sexes alike, but upper-breast in males appears to be more greenish-black and in females more brown-black with or without greenish gloss ; some males have some median coverts glossed and distal lesser coverts tinged, violet-purple.

First winter. Male.—As adult winter but scapulars usually with broader buff edges ; tail-feathers with worn buff tips ; primary

* In females moult of feathers of head, throat and neck is apparently not as complete as in males, many winter feathers being retained. One ♀ Tring, Herts., April 20th has almost completely renewed crown, chin, and throat, which are as in male.—A.C.M.

and greater coverts as juvenile but buff edges mostly worn off ; median coverts plentifully edged warm buff ; lesser coverts distally metallic-green more or less glossed violet-purple, proximally brownish tinged dull green, innermost with a slight violet gloss and mostly edged buff. The juvenile body-plumage (not all scapulars), exceptionally an odd tail-feather, some innermost secondaries and coverts, some or most median and lesser coverts are moulted July to Dec. but not rest of wings or tail. *Female*.—As adult winter female but primary and greater coverts as first winter male ; median coverts more plentifully edged warm buff, innermost brownish-green ; distal lesser coverts duller with less gloss, proximal lesser coverts brownish tinged dull green, very slightly glossed violet, a few with sandy-buff edges but edges usually worn off all but innermost.

First summer. Male.—As adult male but distinguished by duller wing-coverts as in first winter and sandy edges to innermost median when not too abraded. Moults as in adult. *Female*.—As adult female but distinguished by duller wing-coverts as in first winter plumage. N.B.—As adult summer males have primaries worn, first summer males cannot with certainty be identified by relative length of 4th and 5th primaries.

Measurements and structure.—♂ wing 219–234 mm., tail 91–107.5, tarsus 44–49, bill from feathers 23.5–26.5 (12 measured). ♀ wing 216–233, bill 22.5–26.5. Primaries : 1st minute, rest varying considerably individually in each sex, but following formulæ appear to be constant. *Adult male*.—2nd between 7th and 8th or 8th and 9th, 4th or 5th longest, 6th longer than 2nd. *Adult female and young male*.—2nd between 5th and 6th (shorter than 5th), 3rd or 4th longest, in some equal, 6th shorter than 2nd. *Young female*.—2nd between 3rd and 4th or 4th and 5th (longer than 5th), 3rd usually longest but 4th sometimes as long, 6th shorter than 2nd. In adult male tip of wing is rather rounded in shape, while in adult female and young of both sexes it is more pointed owing to sharp decrease in length of inner primaries and outer secondaries. 2nd emarginated inner web, 3rd to 5th both webs ; most pronounced on inner web ; emargination least apparent on 5th. Longest innermost secondary between 6th and 9th primaries. Tail almost square but lateral feathers slightly longer than central. Bill shorter than head, straight and rather slender, slightly convex at tip ; nasal groove extending two-thirds length of bill. Tarsus immediately below tibio-tarsal joint covered with hexagonal scales, rest of tarsus scutellated anteriorly. Four toes, hind one feeble, middle and outer ones webbed at base, nearly up to 1st joint ; claw of middle toe with inner edge dilated.

Soft parts.—Bill black ; legs and feet brownish-flesh ; iris dark brown.

CHARACTERS.—No subspecies. Black crest, metallic-green upper-parts and black pectoral band distinguish it from other British waders.

FIELD-CHARACTERS.—Identified on ground by metallic green upper-parts, long pointed crest, white under-parts and fawn tail-coverts. In flight broad, rounded, flapping wings and black and white coloration are just as unmistakable, whether birds are tossing and tumbling in fantastic aerial love-dance, flying low over some fallow or passing, at a considerable height, from one feeding ground to another. In nesting-season pairs are scattered widely over moors, marshes, heaths and cultivated ground, both pasture and arable, but from autumn to spring higher ground is deserted, and the birds congregate, often in large flocks, on lowlands and coast. Usual note then is a long-drawn “p-e-e-e-t.” Love-song, associated with the spring tumbling, is expressed by Brock as “whey-willuchooee-willuch-willuch—cooe.” Alarm-note when young in danger a rasping “pee-ee-wit.”

BREEDING-HABITS.—Haunts meadows, commons, arable land, marshes and outskirts of moors. *Nest.*—A muddied hollow in ground, lined grass stalks, etc., on slightly raised site. *Eggs.*—Normally 4, occasionally 5, but frequently smaller numbers in second or third layings, thickly blotched or spotted with deep black on clay or stone-coloured ground. Erythristic type rarely occurs; also eggs with bluish-grey ground and few fine spots. Average of 100 British eggs, 47×33.7 . Max.: 58×32.5 and 47.4×37.2 . Min.: 42.3×33.5 and 44.7×31.2 mm. *Breeding-season.*—Usually begins end March; most eggs first half April. *Incubation.*—Apparently chiefly by hen, but Farren states that males also take part. Period 25–28 days. Single brooded, but will lay again several times when robbed.

FOOD.—Earthworms, mollusca (slugs, including *Arion* and *Agriolimax*, snails; also *Tellina*, *Bythinia*, *Physa*, etc.), insects, including coleoptera (*Otiorhynchus*, *Carabidæ*, *Ocypus*, *Aphodius*, *Agriotes*, and various Geodephaga, etc.), diptera (larvæ of *Tipula*, etc.), lepidoptera (larvæ of *Noctuæ*), orthoptera. Also vegetable matter such as seeds of *Ranunculus*, *Spergula*, *Polygonum*, etc.

DISTRIBUTION.—*British Isles.*—Summer resident, passage-migrant and winter-visitor. Generally distributed. In autumn large numbers arrive from Continent and many of our home-bred birds move to coast, while a proportion emigrate southwards, especially from northern districts. In extreme north Scotland known chiefly as summer-resident.

MIGRATIONS.—Summer-residents are migratory to a considerable extent, especially those in northern counties, numbers and distance covered perhaps dependent on weather conditions, but many migrate to Ireland and others to S.W. Europe and N. Africa. Breeding-haunts begin to be deserted in July and movement to coasts and estuaries and thence southwards and overseas is gradual and lasts till mid-Nov. Return late Feb. to mid-April. Arrival and departure of passage-migrants and winter-visitors, late Sept. to early

Nov. and March to early June. Winter weather-movements both of arrival and departure are usual.

DISTRIBUTION.—*Abroad.*—Breeds in Europe (from the Arctic circle to south Spain) and in northern Asia eastwards to the Pacific Ocean [according to Irby north Marocco, and (?) Egypt]. Winters in south Europe, north Africa, Atlantic Islands, Asia Minor, Persia and north India, China and south Japan. Casual in Greenland, Iceland, Alaska, Jan Mayen, Newfoundland, Nova Scotia, New York, Bahamas, and Barbados.

Genus ARENARIA Briss.

ARENARIA Brisson, Orn., I, p. 48 (1760—Type by tautonymy, according to v, p. 132, *Arenaria*=*Tringa interpres* L.)

Characterized by peculiar straight or very slightly recurved, somewhat conical, short, pointed bill with somewhat flattened culmen. Legs and feet short and stout, tarsus not longer than middle toe, scutellated in front, reticulated behind. Toes without any connecting webs, hind toe well developed. 2 species, one with two very closely allied subspecies.

ARENARIA INTERPRES

385. *Arenaria interpres interpres* (L.)—THE TURNSTONE.

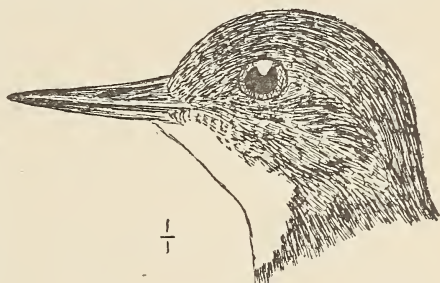
TRINGA INTERPRES Linnæus, Syst. Nat., ed. x, i, p. 148 (1758—Europe and N. America. Restricted typical locality: Gothland).

Strepsilas interpres (Linnæus), Yarrell, III, p. 289; Saunders, p. 557.

DESCRIPTION.—*Adult male and female.* *Winter.*—Lores, crown and nape dusky-brown, feathers of crown with blackish centres, those of fore-head and lores more or less edged buffish-white; mantle and scapulars black-brown and dark sepia, feathers shading to ash-brown or dusky-brown and faintly tipped white (scapulars sometimes with edges shaded tawny); back and rump white, latter more or less black bordering upper tail-coverts; upper tail-coverts black, sometimes more or less tipped white, long ones white; ear-coverts, cheeks and sides of neck dusky black-brown; chin and throat white; lower-throat and breast brown-black, feathers mostly tipped white and with partially concealed white bases; sides of upper-breast ash-brown, some feathers tipped white; an inverted V-shaped area in centre of breast and remaining under-parts white; tail-feathers black-brown tipped white (central pair only slightly), bases white, outer pair white with an irregular subterminal dusky marking; primaries black-brown, shafts white, inner webs white at base, inner feathers with faint white tips and with outer webs with basal halves white; secondaries black-brown with tips and bases white, and inner webs largely white, inner feathers almost entirely white, innermost and coverts as scapulars; primary-coverts black-brown, inner ones tipped white; greater coverts black-brown, broadly tipped white and more or less white on inner

webs ; median coverts sepia or dusky-brown, sometimes shaded buff-brown towards tip ; lesser coverts black-brown, those at bend of wing tipped white or more or less white, inner lesser and median coverts white, latter often with dusky-brown centres or markings. This plumage is acquired by complete moult July to Oct. *Summer.*

Adult male.—The body-feathers (not all scapulars, nor all feathers of back and rump, nor all upper tail-coverts), usually tail-feathers, innermost secondaries and coverts, usually some (sometimes most) median and lesser coverts are moulted Feb. to June but not rest of wings. Fore-head white ; feathers at base of upper mandible and a band (sometimes incomplete) from eye to eye black ; crown more or less heavily streaked varying black or brown-black, feathers edged white, or buff ; nape white, feathers sometimes tipped dusky and washed russet ; mantle and scapulars varied black glossed green and russet, many feathers tipped or faintly edged white ; back and rump as winter ; upper tail-coverts as winter but some black ones margined ochraceous-tawny ; lores white ; black patch below eye continuous with black band which runs from base of lower mandible to breast ; from sides of neck a black band extends to nape, below this black area a broad white band extends on to sides of breast ; ear-coverts, eye-stripe, chin and throat white ; lower-throat and breast black, feathers faintly margined white ; remaining under-parts as winter ; tail-feathers as winter but



The Turnstone (*Arenaria i. interpres*).
Female adult, winter.

central pair broadly tipped and others usually marked ochraceous-buff ; wing as winter but innermost secondaries and coverts olive-brown and sometimes black-brown glossed olive, notched, margined and varied with russet, sometimes more or less russet ; new median and lesser coverts russet some irregularly marked black or dusky-brown, some with distal portion of feather black, tipped russet.

Adult female.—Moult as male but lesser coverts apparently only occasionally renewed and usually fewer median coverts. As male but black band from eye to eye narrower and often incomplete ; crown black or black-brown, feathers narrowly edged buff, apparently never edged white ; nape white more or less washed buff, feathers spotted and marked with dusky-brown or black (sometimes distal portions of feathers more or less sooty-brown) ; mantle and scapulars darker than in male, feathers with fewer russet edgings and markings ; black patch below eye less extensive, black band across sides of neck narrower ; innermost secondaries and coverts black-brown glossed olive or olive-brown, narrowly margined, and sometimes irregularly marked, russet ; median coverts as male

but with less russet and more black, sometimes intermixed with pale drab feathers (sometimes tinged russet) with black-brown centres.

Nestling.—Down on fore-head and eye-stripe buffish-white; crown blackish-grey mixed buffish-white; nape greyish-white irregularly marked black; remaining upper-parts blackish-grey, faintly washed yellowish-buff; black line from base of upper mandible to eye; sides of neck greyish-white washed pale yellowish-buff; chin and throat white; breast with dusky-black gorget, down tipped white; remaining under-parts white.

Juvenile. Male and female.—Crown black-brown, feathers with sandy-brown edges, those of fore-head edged buffish-white; nape dusky-brown or dark ash-brown, feathers narrowly edged sandy and with imperfectly concealed greyish-white bases; mantle and scapulars black-brown with greenish gloss or dark sepia, feathers tipped light buff; black feathers of rump and upper tail-coverts tipped sandy; long tail-coverts white faintly washed buff at tips; under-parts as adult winter but pectoral gorget narrower, sometimes tinged browner, and sometimes feathers edged buff; patch on sides of upper-breast usually lighter and washed buff, some feathers streaked and marked dusky-black; tail-feathers as adult but usually tipped light buff; wing as adult but innermost secondaries and coverts and median and lesser coverts (except white coverts) edged buff, sometimes lesser coverts without buff tips.

First winter.—As adult winter but distinguished by buff edges to some retained scapulars, innermost secondaries and median coverts. The juvenile body-plumage (not all the scapulars), usually tail-feathers, innermost secondaries and coverts, a few median and lesser coverts are moulted Aug. to Nov. but not rest of wings.

First summer. Male.—Moult as in adult after which becomes like adult but distinguished by worn buff edges of retained juvenile wing-coverts, especially innermost median. Crown more heavily streaked black-brown or black than adult male, feathers narrowly edged warm buff (sometimes white); black band from eye to eye narrower and often incomplete; nape more or less streaked dusky; mantle, scapulars, innermost secondaries and new wing-coverts with less russet than in adult male and usually with rather more, or about same, as in adult female. *Female*.—Moult as in adult but only one or two innermost secondaries and a few wing-coverts are renewed. Like adult female but less russet on upper-parts, innermost secondaries and new wing-coverts.

Measurements and structure.—♂ wing 147–157 mm., tail 55.5–61.5, tarsus 23–26, bill from feathers 20–24 (12 measured). ♀ wing 146–162, bill 21.5–24.5. Primaries: 1st minute, 2nd longest, 3rd 3–6 mm. shorter, 4th 11–17 shorter, 5th 21–24 shorter, 6th 33–38 shorter. Longest inner secondary between 4th and 6th primaries. Tail rather short, slightly rounded. Bill moderately stout, short, slightly bent upwards, tip blunt, nasal groove extends to half

length of bill. Four toes, claw of middle one with inner side slightly dilated.

Soft parts.—Bill black; legs and feet deep orange, (juv.) brownish-yellow; iris brown.

CHARACTERS AND ALLIED FORMS.—*A. i. morinella* (Arctic N. America) is smaller and has more chestnut on upper-parts. *A. melanocephala* (Western N. America) has in summer upper-parts uniform bronzy brown-black, in winter and juvenile chin and throat dusky-brown. Peculiar bill, white chin, throat and back, together with in winter and juvenile dusky-black, and in summer chestnut and black upper-parts distinguish Turnstone.

FIELD-CHARACTERS.—Seldom occurs away from coast, where pebble-ridges, tangle-covered rocks, and tide-line on sandy shores are resorted to rather than mud-flats. Orange-red legs and tortoiseshell plumage are characteristic, but broken colour-pattern makes little parties—they seldom pack in large flocks—invisible on shingle or among broken rocks. Appearance in flight, which is wavering and rather slow, boldly pied. Note on the wing a thin crackling chatter. Alarm-note “tche, tche.”

BREEDING-HABITS.—Nests on islands or near coast, making hardly any nest beyond a scrape in ground with occasionally a few stalks or bents. In high north usually breeds on quite exposed rocky ground, but further south often under shelter of growing plants, bushes, stones, and in one case down a Puffin burrow. *Eggs*.—Usually 4, sometimes 3 only, varying in ground-colour from greyish to greenish or brownish, spotted and blotched with dark brown and underlying ashy-purple. Average of 100 eggs, 40.5×29.2 . Max. : 44.5×30.4 and 43.2×31.3 . Min. : 36×28.2 and 40.5×26 mm. *Breeding-season*.—Begins early June in south and from mid-June onward in north. *Incubation*.—By both sexes, but female takes much greater share. Period not ascertained. Single brooded.

FOOD.—Small mollusca, chiefly univalves; small crustacea (Gammaridæ) and miscellaneous matter thrown up on shore, including fragments of fish and fish fry, but chiefly insects, including coleoptera, diptera (*Tipulidæ* and larvæ of *Chironomidæ*), hymenoptera, larvæ of lepidoptera (*Argynnis chariclea* and *Dasychira grænländica*). Also spiders and acarids, as well as vegetable matter, especially at high latitudes (seeds of *Draba*, seaweed, etc.).

DISTRIBUTION.—*British Isles*.—Winter-visitor and passage-migrant (late July to mid-Nov. and mid-March to early June). Widely distributed all coasts chiefly autumn and spring but many stay winter, especially in south England and Ireland. Non-breeding birds frequently observed throughout summer. Occasionally inland on passage. Supposed, but never proved, to have bred on several occasions.

DISTRIBUTION.—*Abroad*.—Breeds in Greenland, Iceland, Spitsbergen, arctic Europe, south to Cattegat and Baltic, and N. Asia,

eastwards to Alaska. Winters on coasts of Europe, Africa, Asia, Oceania and Australia. Casual Franz Josef Island. Replaced by a very closely allied form in arctic America, which migrates south to California, Central and S. America.

Genus BARTRAMIA Less.

BARTRAMIA Lesson, *Traité d'Orn.*, livr. 7, p. 553 (1831—Monotype: *B. laticauda* = *longicauda*).

Tail very long, wedge-shaped, longer than or at least fully as long as half length of wing and almost three times as long as culmen. Bill straight, tip decurved. Groove in upper mandible extending about two-thirds length of bill. Tarsus scutellated in front and behind, but some hexagonal scales just below tibio-tarsal joint. Hind toe well developed. 1 species only.

BARTRAMIA LONGICAUDA

386. *Bartramia longicauda* (Bechst).—BARTRAM'S SANDPIPER.

TRINGA LONGICAUDA Bechstein, *Allg. Ueb. Vögel*, iv, ii, p. 453 (1811—N. America)

Bartramia longicauda (Bechstein), Yarrell, iii, p. 440; Saunders, p. 603.

DESCRIPTION.—*Adult male and female.* *Winter.*—Crown streaked sepia, feathers broadly edged buff; nape same but streaks narrower; mantle and scapulars sepia glossed olive, feathers edged sandy-brown or buff, those of mantle with subterminal bars and scapulars more or less barred black-brown; back and rump black-brown; central upper tail-coverts black, notched and tipped cream, lateral ones cream-buff streaked black-brown; ear-coverts, cheeks and sides of neck buff, narrowly streaked sepia; chin and throat white; lower-throat and upper-breast cream or buff boldly streaked sepia; lower-breast and flanks cream or buff with Y-shaped sepia bars; rest of under-parts cream, outer tail-coverts with a few sepia bars; axillaries and under wing-coverts white narrowly barred black-brown; two central pair tail-feathers dark ash, barred black-brown and edged light buff, remainder sandy-isabelline shading to white on outer webs, broadly tipped same with a few black-brown bars; primaries dark sepia, inner webs more or less white barred sepia, 2nd with white shaft (remainder shafts brown) and outer web often notched white, 7th and succeeding tipped white, inner ones notched white and sometimes dark sepia, on outer webs; secondaries sepia, paler on inner webs, tipped and notched white or buff, sometimes with obsolete dark sepia bars, innermost as scapulars; primary-coverts black-brown; greater and median coverts sepia, broadly edged buff and barred black-brown; lesser coverts sepia edged buff, some with subterminal black-brown bars. This plumage is acquired by complete moult Aug. to Jan., body-moult apparently commences Aug. and wing-moult takes place Dec. and Jan. when occasionally some body-feathers are also renewed. *Summer.*—The body-

feathers, tail, innermost secondaries and coverts, some median and lesser coverts are apparently moulted in spring (two birds examined). Coloration as winter.

Nestling.—Down on fore-head and nape white, blackish at base and more or less tipped sandy-rufous; crown and rest of upper-parts variegated black-brown, greyish-white and sandy-rufous; eye-stripe, sides of face and under-parts white, behind eye a small black-brown patch.

Juvenile.—Like adult but feathers of mantle and scapulars black-brown, edged all round with light or warm buff, with practically no barring except some notches of brown-black on outer edge of scapulars; median coverts sepia or ash-brown, broadly tipped and notched buff or cream and with a subterminal shading approximating in shape to a semi-circle, sometimes a round patch and



Bartram's Sandpiper (*Bartramia longicauda*). Second (outer) primary.

sometimes an incomplete barring and notching or bordering of dark sepia, shafts brown; lesser coverts with broader buff edges than adult. Edges to feathers of mantle and scapulars become very abraded but absence of definite barring on scapulars and median coverts appears always to indicate a juvenile. [Only one freshly plumaged juvenile examined.]

First winter.—As adult winter but distinguished by juvenile median and lesser coverts. Juvenile body-feathers, innermost secondaries and coverts, some median and lesser coverts are moulted Aug. to winter but not rest of wings nor tail. *First summer*.—Apparently not to be distinguished with certainty from adult.

Measurements and structure.—♂ wing 155–176.5 mm., tail 72–84, tarsus 44–52, bill from feathers 28–32.5 (12 measured). ♀ wing 162–176, bill 28–32. Primaries: 1st minute, 2nd longest, 3rd 2.5–4.5 mm. shorter, 4th 9–11.5 shorter, 5th 17–29 shorter, 6th 27–37 shorter. Longest inner secondary between 4th and 6th primaries. Tail rounded. Bill straight, short, slender, upper mandible slightly decurved at tip, nasal groove extends two-thirds length of bill. Four toes, outer and middle ones webbed at base almost up to first joint, hind one slightly curved.

Soft parts.—Bill black; legs and feet yellow; iris black.

CHARACTERS.—No subspecies or near allies. Distinguished by black-brown rump and upper tail-coverts, wedge-shaped tail and barred inner webs of primaries.

FIELD-CHARACTERS.—Easily told from any other European Sandpiper by its size, proportionately short bill and noticeably long tail.

In habits and actions suggesting a Golden Plover, but longer legs and tail and brown coloration prevent confusion. Call-note is long, rolling and very musical, absolutely unmistakable. (Ludlow Griscom.)

BREEDING-HABITS.—A prairie haunting species. *Nest*.—Slight depression in ground, lined with a few straws. *Eggs*.—Usually 4, ground-colour creamy to warm yellowish, finely speckled with sepia or reddish-brown, with a few larger spots or blotches and slaty shellmarks. Average of 28 eggs, 44.5×33.4 . Max. : 47×32.6 and 43.9×35.9 . Min. : 43.1×33 and 43.6×31.6 mm. *Breeding-season*.—Latter part May and early June. *Incubation*.—Apparently chiefly by female. Period not ascertained. Single brooded.

FOOD.—Mainly insects, including coleoptera (*Ocypus*, *Othius*, *Philontha* and *Cytilus* in British killed specimen), orthoptera (grasshoppers, crickets, and earwigs), etc. Also earthworms, seeds, and vegetable matter.

DISTRIBUTION.—*British Isles*.—About thirteen. Near Warwick, end Oct., 1851. Near Cambridge, Dec. 12, 1854. River Parret (Somerset) about 1850. Near Mullion (Cornwall) Nov. 13, 1865. Lows Stead (Northumberland) Nov. 21, 1879. [Leadenhall Market, said from Lincs., Oct., 1880.] Near Lizard (Cornwall) Oct., 1883. Near Ballinasloe (Galway) autumn, 1855. Near Bandon (Cork) Sept. 4, 1894 (Saunders, p. 603 ; cf. Yarrell, III, p. 440). [Poulterer's shop, Falmouth (Cornwall) Oct., 1903.] Romney Marsh (Kent) July 18, 1908 (*Brit. B.*, II, pp. 206, 269). Near St. Leonard's (Sussex) July 3, 1914, (*op. c.*, VIII, p. 101). Bunduff (Leitrim) Nov. about 1901 (*Zool.*, 1916, p. 194).

DISTRIBUTION.—*Abroad*.—Breeds from Alaska to Missouri, Indiana, and north Virginia, east to Ontario, winters on pampas of S. America south to Argentine. Occurs occasionally in Europe: the only authenticated instances out of British Isles, however, seem to be single captures in Holland, Italy, and Malta while Naumann states one in Germany, Gould one in Australia, but specimens not traced in either case.

Genus PHILOMACHUS Anonymous.

PHILOMACHUS Anonymous, Allg. Lit.-Zeitung, 1804, II, No. 168, Col. 542 (Monotype: *Tringa pugnax*)

Very similar to *Calidris* but bill tapering to tip and higher at base, which is covered by short feathers. Nasal groove extending nearly to tip of bill. Sternum only one incision each side. Size of sexes very different, male much larger. Sexes alike in colour in winter, but in spring male with extraordinary "ruff" and varying in colours to an unequalled degree, also lores and sides of head bare. Tail-coverts very long. Hind toe present. Only 1 species known.

PHILOMACHUS PUGNAX

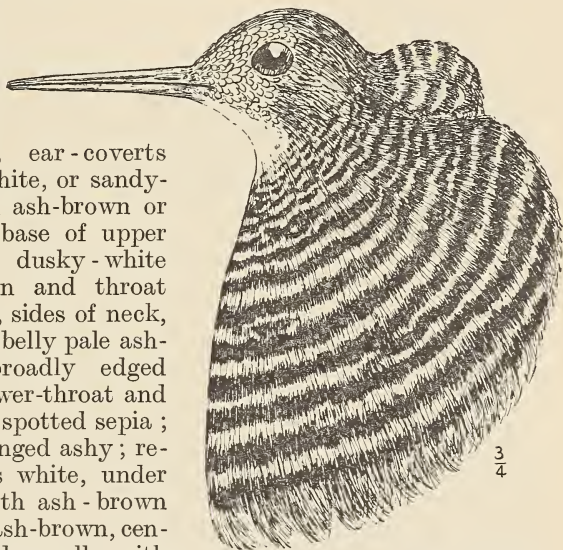
387. *Philomachus pugnax* (L.)—THE RUFF.

TRINGA PUGNAX Linnæus, Syst. Nat., ed. x, p. 148 (1758—Europe. Restricted typical locality: South Sweden).

Tringa Grenovicensis Latham, Gen. Synops. Suppl., p. 293 (1787—ex t.c., p. 249, No. 38, Greenwich)

Machetes pugnax (Linnæus), Yarrell, III, p. 246; Saunders, p. 599; Hand-List. (1912), p. 172.

DESCRIPTION.—*Adult male and female.* *Winter.*—Crown and nape sandy-brown streaked darker; mantle, scapulars, back, rump and central upper tail-coverts pale sepia, feathers with dark shafts and lighter edges, sometimes some feathers with central shadings of black-brown; sides of back, rump and lateral upper tail-coverts white; ear-coverts and cheeks dusky-white, or sandy-brown, spotted with ash-brown or sepia; feathers at base of upper mandible and lores dusky-white spotted sepia; chin and throat white; lower-throat, sides of neck, breast and sides of belly pale ash-brown, feathers broadly edged white, sometimes lower-throat and sides of neck faintly spotted sepia; flanks white, some tinged ashy; remaining under-parts white, under primary-coverts with ash-brown bases; tail-feathers ash-brown, central pairs sepia and usually with sub-terminal band of black; primaries sepia, paler on inner webs, shading to white at base, with white or brownish shafts; secondaries pale sepia or ash-brown edged white, inner webs paler, shading to white at base, innermost pale sepia with one or two irregular black marks; primary-coverts dark sepia, tipped white; greater coverts sepia (sometimes inner ones with subterminal black patch on each web) and broadly tipped white; median and lesser coverts pale sepia with dark shafts and lighter edges and faintly tipped white (sometimes lower scapulars, secondaries, greater, median and lesser coverts have a slight greenish gloss). This plumage is acquired by complete moult July to Dec.



The Ruff (*Philomachus pugnax*). Male adult, summer.

Adult male. Summer.—Most of the body-feathers (not all and sometimes none on back and rump, nor all scapulars), usually tail, some innermost secondaries and coverts, some median and lesser

coverts, are moulted March to June but not rest of wings. A varying number of winter-feathers are retained on upper and under-parts. Colour of ruff and upper-parts varies very greatly and for convenience in description may be grouped as follows, though it must be understood that every intergradation exists between these "types."

*Upper-parts, tail, inner secondaries,
and new wing-coverts.*

Type A. Black or brown more or less glossed purplish.

Type B. Whitish, barred and freckled thickly with brown and black, latter glossed purple.

Type C. Chestnut or sandy-buff, with markings of brown, purplish-black or black.

Occipital tuft and pectoral ruff.

1. Sandy-buff or chestnut, uniform, or barred, freckled or spotted black, sometimes glossed purple
or
2. Purple generally, interspersed white or barred sandy-buff or rufous
or
3. White, or white ticked buff.

As in A above but 1 is rare.

As in A, but in addition (4) chestnut interspersed with white or sandy.

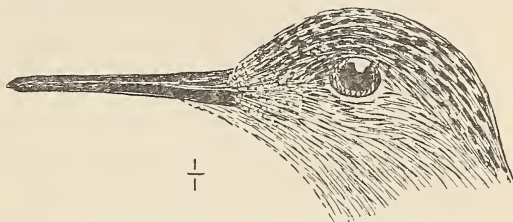
Sides of breast and flanks usually black, glossed purple and interspersed with white but sometimes like ruff; belly, vent and under tail-coverts white, latter sparsely spotted. N.B.—After summer plumage is attained, feathers on fore-part of crown, round eyes and lores are lost and replaced by numerous tubercles.

Adult female. Summer.—No "ruff" and no marked variations. Crown and nape sandy, feathers narrowly streaked black; feathers of mantle with black or black-brown centres glossed purple and edged ash-brown and sandy-buff; scapulars and central upper tail-coverts sepia or ash-brown, irregularly marked black or black-brown and sometimes warm buff; ear-coverts and cheeks sandy, feathers with wavy black bars and streaks; chin and throat white, spotted dusky; lower-throat and breast fawn-brown or warm buff, feathers usually barred subterminally with dark sepia and broadly edged white or buff; flanks white washed sandy-brown or warm buff and sometimes marked sepia; remaining under-parts white; tail-feathers sepia, sometimes irregularly marked buff and tipped white, two central pairs usually sepia with irregular bars of black-brown and usually of warm buff speckled brown; new inner secondaries as scapulars; new median and lesser coverts ash-brown, barred subterminally black-brown, sometimes shaded and barred warm buff and tipped ash-brown and white or light buff.

Nestling.—Down on fore-head pinkish-buff; a black-brown median line from base of upper mandible to crown; crown pinkish and yellowish-buff irregularly marked black-brown; nape dusky, down tipped yellowish-buff; remaining upper-parts (including back of thighs) yellowish-buff intermixed with velvety black-brown,

down tipped pinkish-buff; ear-coverts and cheeks light buff; under-parts whitish suffused yellowish-buff.

Juvenile. Male and female.—Crown sepia, feathers edged warm buff; nape pale ash-brown, feathers fringed warm buff; mantle and scapulars brown-black, feathers fringed warm or ochraceous-buff; back, rump and upper tail-coverts as adult winter but sepia feathers edged warm buff; ear-coverts and cheeks buff, narrowly streaked sepia; chin white or light buff; throat, sides of neck, breast and flanks warm buff; remain-



The Reeve (*Philomachus pugnax*), Juvenile.

ing under-parts as adult; tail ash-brown, feathers bordered blackish and fringed (and sometimes notched or barred) ochraceous-buff towards tip; wing as adult but innermost secondaries as mantle; greater, median and lesser coverts ash-brown bordered darker brown and fringed warm or ochraceous-buff.

First winter. Male and female.—As winter adults but distinguished by some retained juvenile scapulars and innermost secondaries which have buff edges and are brown-black not ash-brown as in adult and by buff edges to median coverts. The juvenile body-plumage (not all scapulars), sometimes tail-feathers, some innermost secondaries and coverts, some median and lesser coverts are moulted Aug. to Dec. but not rest of wings. *First summer.*—Moult as adult. Only to be distinguished from adults when buff edges to juvenile wing-coverts have not become completely abraded.

Measurements and structure.—♂ wing 186–198 mm., tail 61–68, tarsus 45.5–52, bill from feathers 34–38 (12 measured). ♀ wing 149.5–163.5, bill 29.5–33. Primaries: 1st minute, 2nd longest, 3rd equal or 1–6 mm. shorter, 4th 7.5–12.5 shorter, 5th 19–26 shorter, 6th 31–40 shorter. Longest inner-secondary between 3rd and 6th primaries. Tail rounded, middle pair of feathers slightly longer than rest. Tail-coverts nearly reaching end of tail. Males acquire in spring elongated feathers at back and sides of head (longest at sides) forming two occipital tufts, while elongated feathers of lower-throat and upper-breast form a pectoral ruff or frill. Bill short, straight, slender and flattened towards point; nasal groove extending nearly to end of bill. Four toes, anterior ones long, outer ones webbed at base.

Soft parts.—Bill black-brown, fleshy at base; legs and feet greenish-yellow, orange-yellow or yellowish-brown; iris dark brown.

CHARACTERS.—No subspecies or near allies. Distinguished by short, straight bill and medium size (smaller than Redshank, larger than Dunlin); in winter by light sepia upper-parts and pale ash-brown

breast ; in summer : male by "ruff," female by black and sandy upper-parts and fawn-coloured breast, juvenile by warm buff throat and breast and edgings on upper-parts.

FIELD-CHARACTERS.—Female in breeding-dress has thrush-like spots at sides of upper-breast, whilst feathers of upper-parts are blackish margined with pale buff or white. Despite great individual variation in colour male in summer is, with his extravagant ruff and ear-tufts, unlike any other British bird, but majority that occur are young on passage in autumn. At that season plumage of sexes is similar, but male is larger. Bill of medium length, stout and just perceptibly decurved ; legs variable, usually greenish ; upper-parts brown with broad buff margins to feathers ; fore-neck and sides of breast pinkish-buff ; under-parts white. Narrow white wing-bar shows in flight as does an oval white patch on each side of brown-coloured median area in tail, the best character for identification at all ages. Haunts swamps, marshes and margins of lakes, where it stands erect or walks with deliberate gait probing mud for food. During courtship males assemble at "hill," a bare spot on marsh-land, spar and posture, crouching with ruffs expanded and bills touching ground. Silent as a rule, but sometimes utters a low "tu-whit" on being disturbed, and is said to whistle loudly when migrating. Jourdain speaks of low guttural note of female when young are in danger.

BREEDING-HABITS.—In central Europe nests are mostly found among thick grass in meadows not far from "hill." *Nest.*—A hollow in ground neatly lined with fine dry grasses and well hidden. *Eggs.*—Normally 4, pyriform, usually ranging from pale grey or ochreous to pale green, exceptionally clear blue, boldly spotted and blotched with dark sepia and ash-shellmarks, thickest at large end. White eggs have also been recorded. Average of 141 eggs, 43.9×30.7 . Max. : 47.5×30.5 and 43.2×32.1 . Min. : 39.2×31.6 and 42.9×28 mm. *Breeding-season.*—Usually 2nd and 3rd weeks May in Central Europe, but not till June in north. *Incubation.*—By female alone. Period not definitely known, *vide* Naumann 17–19 days. Single brooded.

FOOD.—Chiefly insects of various orders including smaller coleoptera (*Agonum*, *Bembidium*, *Parnus*, *Cyclonotum*, *Sitones*, *Pisodes*, *Rhinoncus* and *Philhydrus*) ; orthoptera (earwigs, grasshoppers, etc.) diptera (*Tipula*, etc.) ; neuroptera (larvæ of *Phryganeidæ*, *Epheméridæ*) ; Trichoptera (*Limnophilus*) and Hemiptera (*Naucoris*). Also small freshwater bivalves, small crustacea and worms. Vegetable matter is also eaten, e.g. seeds of plants (*Rumex*, *Polygonum*, etc.), algæ, and in winter quarters rice and durra.

DISTRIBUTION.—*British Isles.*—Passage-migrant (mid-April to early June and end July to early Nov.) and occasional winter and summer. Formerly bred many places England but only occasionally now. A pair nested 1901, 1902, and 1903 near Teesmouth (Durham) ; in Norfolk Broads, 1907 (and possibly other years) ; eggs said to have

been taken Lancs., 1910 (*cf. Brit. B.*, I, p. 65; II, p. 268; IV, p. 222). Otherwise chiefly passage-migrant, much more frequent autumn than spring, and on east side Great Britain than west, where, as in Hebrides and Ireland, decidedly scarce, even autumn, and very rare spring.

DISTRIBUTION.—*Abroad*.—Breeds in north and central Europe, from Lapland, Dwina and Petchora to Holland, Belgium, N. France, Bavaria, Hungary and south Russian Steppes, eastwards in Siberia to Lena and Kolyma. Migrates south to S. Africa, India, Ceylon, Burmah, rare or casual on Atlantic Isles, in China, Japan, Borneo, in eastern N. America from Greenland to Ontario, Barbados and Guadeloupe, Surinam. Casual Iceland and Bering and Pribiloff Islands.

Genus CROCETHIA Billb.

CROCETHIA Billberg, *Syn. Faunae Scand.*, I, ii, tab. A and p. 132 (1828—New name for *Calidris* Illiger, 1811, which is preoccupied)

Not appreciably different from *Calidris* (*Erolia*) except for entire absence of hind toe. Bill and tarsus about equally long. 1 species.

CROCETHIA ALBA

388. *Crocethia alba* (Pall.)—THE SANDERLING.

TRYNGA ALBA Pallas, *Vroeg's Cat. Coll.*, Adumbratiuncula, p. 7 (1764—Holland)

Calidris arenaria (Linnaeus), *Yarrell*, III, p. 420; *Saunders*, p. 597.

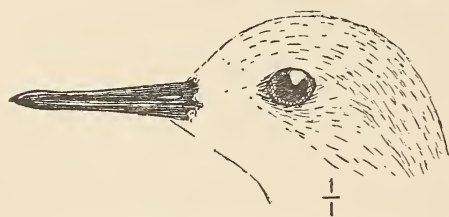
Calidris leucophæa (Pall.), *Hand-List* (1912), p. 173.*

DESCRIPTION.—*Adult male and female. Winter*.—Fore-head white; crown pale ashy, narrowly streaked brown; nape pale ashy, feathers with brown shafts; remaining upper-parts ash-grey, feathers edged white, with dusky shaft-streaks, lower scapulars with inner webs washed white, some of long upper tail-coverts blackish-grey tipped white, sides of rump and lateral upper tail-coverts white; ear-coverts and narrow band in front of and below eye and sides of neck white, feathers narrowly streaked or tipped dusky; cheeks, chin and remaining under-parts white, some feathers of sides of breast sullied ash-grey and with sepia shafts; tail-feathers pale ash-brown, sometimes shading to white, central pair blackish-grey, all narrowly edged white and more or less white towards base; primaries blackish-grey, paler on inner webs, with white shafts and bases, 6th or 7th and succeeding with outer webs whitish towards base (5th usually faintly margined white on outer web); secondaries blackish-grey with white bases and tips, inner

* Formerly we adopted the name *leucophæa*, but the first part of *Vroeg's Catalogue* is not binomial, therefore only the names in the second part, the *Adumbratiuncula*, can be accepted—E.H.

ones white on inner webs, one next innermost more or less white, innermost and their coverts dark ash-grey, narrowly edged white ; primary-coverts blackish-grey faintly (inner ones broadly) tipped white ; greater coverts dark ash with broad white tips forming a wing-bar ; median coverts ash-grey, edged white and with dark shafts ; lesser coverts blackish-grey, lower ones tipped white. This plumage is acquired by complete moult July to Nov. N.B.—Four adults, February, Yucatan, all had 2nd primary in quill and were apparently completing wing-moult.

Adult male. Summer.—The body-feathers (not all the scapulars sometimes not all, if any, feathers of back and rump and not all upper tail-coverts), sometimes central pair of tail-feathers, usually some innermost secondaries and coverts, some median and lesser coverts, but not rest of wings nor tail-feathers, are moulted March



The Sanderling (*Crocethia alba*). Male adult, winter.

to May ; winter body-feathers are sometimes retained on upper- and under- parts. Fore-head and crown streaked black, feathers broadly edged at sides light pink-cinnamon and tipped white ; nape white, washed warm buff and streaked dusky-brown ; mantle, scapu-

lar, new feathers of back and rump and upper tail-coverts black, feathers notched and fringed pink-cinnamon or orange-cinnamon and tipped white or pale ash-grey ; remaining upper-parts as winter ; chin white, sometimes some feathers washed pink-cinnamon and spotted dusky ; loreal streak, cheeks, ear-coverts, sides of neck, throat and upper-breast pink-cinnamon, feathers spotted or streaked sepia or dusky and tipped white, sometimes upper-throat white ; upper-breast with wavy sepia bars ; remaining under-parts white ; tail as winter but new central pair sepia edged orange-cinnamon ; wing as winter but new innermost secondaries and coverts and new median and lesser coverts sepia, tipped white and more or less notched and edged pink-cinnamon. *Female.*—As male but upper-parts greyer, feathers of crown edged, and of mantle and scapulars edged and notched greyish-white instead of pink-cinnamon, nape not suffused buff as in male ; under-parts as male but pink-cinnamon areas usually paler (sometimes white) ; new innermost secondaries and coverts broadly edged and tipped white, pink-cinnamon markings sometimes more or less absent.

Nestling.—Fore-head buff with a median black line from base of upper mandible to crown ; nape buff, down with dusky bases ; rest of upper-parts variegated light buff, warm buff and black and more or less spangled white ; lores buff, two black lines across lores towards eye ; under-parts white, cheeks, chin and throat suffused light buff.

Juvenile.—Fore-head and eye-stripe white, sometimes washed buff, feathers tipped and spotted dusky; nape greyish-white streaked dusky-brown; crown, mantle and scapulars black-brown, feathers tipped, and those of mantle and scapulars also notched, creamy-yellow and white; back, rump and upper tail-coverts ash-brown, feathers with light buff or creamy-yellow tips with a narrow terminal dusky line; central upper tail-coverts blackish-grey, tipped creamy-yellow; loreal streak dusky; ear-coverts streaked dark sepia, feathers edged buff at sides; narrow line in front of and below eye black; cheeks and sides of neck white (sometimes washed buff) streaked dusky; sides of breast creamy-yellow, feathers faintly tipped dusky, some with sepia marks towards tip; remaining upper- and under-parts as adult; tail-feathers as adult but central pair sepia, darker on inner webs and tipped creamy-yellow or white (sometimes rest of tail-feathers with a small dusky subterminal marking); wing as adult but innermost secondaries and coverts as scapulars; median coverts light sepia shading to creamy-yellow with a terminal line of dusky, sometimes with a subterminal spot or bar of dark sepia; lesser coverts dark sepia, a few tipped cream.

First winter.—As adult winter but distinguished by juvenile feathers of rump when not too abraded, one or more worn spear-shaped juvenile scapulars and innermost secondaries and some retained juvenile median coverts. The juvenile body-feathers (not all scapulars, nor all feathers of back and rump), usually tail-feathers, usually some innermost secondaries and coverts, some median and lesser coverts, but not rest of wings are moulted Sept. to Dec. *First summer*.—Moult as adult, after which can only be distinguished by faint dusky terminal border to faded creamy edge of innermost median coverts when not too abraded.

Measurements and structure.—♂ wing 117–130 mm., tail 46–55, tarsus 22–26, bill from feathers 23.5–26.5 (12 measured). ♀ wing 120–130, bill 23–28.5. Primaries: 1st minute, 2nd longest, 3rd equal or slightly shorter, 4th 6–13 mm. shorter, 5th 14–21 shorter, 6th 25–29 shorter. Longest inner secondary between 4th and 6th primaries. Tail fairly square, feathers pointed and central ones elongated and projecting about 5 mm. Tarsus scutellated anteriorly. Three toes not webbed, no hind toe. Bill short, straight and slender, tip slightly enlarged; nasal groove extending nearly to tip.

Soft parts.—Bill, legs and feet black; iris brown.

CHARACTERS.—No subspecies recognized. Absence of hind toe, in winter and juvenile white under-parts, in summer chin, throat and upper-breast pink-cinnamon spotted dusky distinguish Sanderling from its near allies.

FIELD-CHARACTERS.—Slightly larger than Dunlin, its frequent associate on sandy shores and mud-flats. Bill shorter than Dunlin's and straight. In winter entire under-parts pure white, upper-parts hoary—adults look almost white at some distance. In summer

upper-parts mottled, black, red and grey; upper-breast pale chestnut. White wing-bar conspicuous in flight; no white band on rump or tail but narrow white border on either side of uniformly coloured central area. Note sharp, but not loud, "wick, wick." Walter describes love-song, uttered on wing, as harsh "trr-trr-trr."

BREEDING-HABITS.—A bird of the Arctic tundra, breeding usually on rather bare, stony patches. *Nest.*—Merely a scrape in hollow at edge of tuft of *Dryas*, the cup lined with dead leaves of *Saxix arctica*. *Eggs.*—Normally 4, pyriform, ground-colour pale greenish when fresh fading to buffish or ochreous, and sparsely marked with small brown spots and ashy shellmarks, with occasionally a blackish streak or a spot or two at the large end. Average of 41 eggs, 35.7×24.7 . Max.: 38.2×24.7 and 34.1×26.1 . Min.: 33.1×24.4 and 35.3×23.5 mm. *Breeding-season.*—From June 20th onward in Greenland, but on the Taimyr chiefly in early July. Single brooded. *Incubation.*—*Fide* Manniche by hen alone, but Feilden and Walter report males shot from eggs. Period 23–24 days (Manniche).

FOOD.—Chiefly picked up on shore and includes small crustacea (sandhoppers, etc.), remains of fish; mollusca (small univalves, bivalves, pteropoda and egg-cases of *Buccinum*), worms, etc. Also buds and seeds of arctic plants (*Saxifraga oppositifolia* and *Salicornia*), bits of moss and algæ. Also recorded as taking insects (small beetles and flies) and Medusæ cast up on shore.

DISTRIBUTION.—*British Isles.*—Winter-visitor and passage-migrant (late July to mid-Nov. and early April to mid-June). Widely distributed on sandy coasts but scarce west Scotland. Chiefly passage-migrant staying through autumn, but a good many winter. Non-breeding birds observed frequently throughout summer. Occasional inland.

DISTRIBUTION.—*Abroad.*—Breeds in arctic regions (Spitsbergen, north Siberia (recorded Taimyr and New Siberian Is.), Iceland (?), from Melville Island and Ellesmere Land to Greenland, Alaska). In winter and during migration all the lands southwards, as far as south Africa, Java, Borneo, Philippines, Australia, the Marshall and Hawaiian Islands, and in America, Chile and Patagonia.

Genus CALIDRIS Anonymous.*

CALDRIS Anonymous, Allg. Lit.-Zeitung, 1804, II, No. 168, Col. 542 (Type by tautonymy: *Tringa calidris*=*canutus*). (*Erolia*, 1816).

Large genus of birds of various size and differences in length of bill and feet and legs. Bill slender, straight or slightly curved, more or less soft and flexible, in skin somewhat rugose before frontal feathering, generally longer than tarsus. No web or very small one between outer and middle toes. Both mandibles with

* The discovery of the anonymous article in the "Allgemeine Literatur-Zeitung" necessitates the acceptance of the name *Calidris* for the genus called *Erolia* in the Hand-List.—E.H.

narrow groove. Tail square or nearly so, seldom much graduated, middle pair mostly produced beyond rest, tail often slightly emarginated laterally. Hind toe developed. Females mostly with longer bills and sometimes generally larger than males. About 20 species in nearly all parts of Globe.

Key to species of genus CALIDRIS.

1	{ Wing over 150 mm.	.	<i>C. canutus</i> , p. 565
	{ Wing under 150 mm.	2	
2	{ Tibia covered by feathers to tibio-tarsal joint		<i>C. maritima</i> , p. 590
	{ Lower part of tibia not covered by feathers	3	
3	{ Upper tail-coverts chiefly or entirely white	4	
	{ Upper tail-coverts dark brown or black	5	
4	{ Bill over 30 mm., abdomen rufous in spring	.	<i>C. ferruginea</i> , p. 572
	{ Bill under 30 mm., abdomen white in spring	.	<i>C. fuscicollis</i> , p. 588
5	{ Tail graduated	.	<i>C. acuminata</i> , p. 584
	{ Tail more or less square, but middle pair of rectrices prolonged	6	
6	{ Bill distinctly longer than tarsus	.	<i>C. alpina</i> , p. 568
	{ Bill not distinctly longer than tarsus	7	
7	{ Outermost tail-feather white	.	<i>C. temminckii</i> , p. 579
	{ Outermost tail-feather grey-brown or brown	8	
8	{ Wing over 110 mm.	9	
	{ Wing under 110 mm.	10	
9	{ Tarsus over 25 mm.	.	<i>C. maculata</i> , p. 581
	{ Tarsus under 25 mm.	.	<i>C. bairdii</i> , p. 586
10	{ Tarsus and feet black	.	<i>C. minuta</i> , p. 575
	{ Tarsus and feet yellowish or olivaceous	.	<i>C. minutilla</i> , p. 578

CALIDRIS CANUTUS

389. *Calidris canutus canutus* (L.)—THE KNOT.

TRINGA CANUTUS Linnæus, Syst. Nat., ed. x, i, p. 149 (1758—Europe.
Restricted typical locality: Sweden)

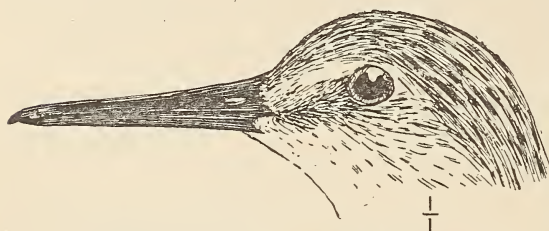
Tringa canutus Linnæus, Yarrell, III, p. 413; Saunders, p. 595.

Canutus canutus (L.). Hand-List. (1912), p. 172.

DESCRIPTION.—*Adult male and female.* *Winter.*—Crown, nape, mantle and scapulars ash-grey, feathers with dark shafts and lighter edges; back and rump ash-grey, feathers bordered darker subterminally and edged white; upper tail-coverts and feathers of lower-rump white, bordered and irregularly marked and barred dark or blackish ash-brown; eye-stripe, ear-coverts, cheeks and sides of neck white, narrowly streaked ash-brown; loreal streak ash-grey; chin and throat white, lower-throat narrowly streaked ash-brown; breast white, feathers with wavy bars (sometimes narrow streaks) of ash-brown; sides of breast as mantle; flanks white, irregularly marked and barred ash-brown; belly, vent and under tail-coverts white, some of latter with narrow median streaks or irregularly marked ash-brown; axillaries white irregularly barred ash-brown; under wing-coverts white, some marked ash-brown; tail-feathers ash-grey narrowly edged white; primaries brown-black, paler on

inner webs and shading to white at base, inner ones with faint white borders on outer webs ; secondaries ash-grey, inner webs paler, shading to white at base, outer webs margined white, innermost and their coverts as mantle ; primary-coverts and bastard-wing brown-black faintly tipped white, inner coverts broadly tipped white ; wing-coverts ash-grey, edged white, lesser coverts darker. This plumage is acquired by complete moult July to Oct. N.B.—Ash-grey of upper-parts, including wing-coverts, fades to ash-brown.

Adult male. Summer.—The body-feathers (not all feathers of back and rump, nor all scapulars or upper tail-coverts), sometimes central pair of tail-feathers, occasionally an odd pair or a single tail-feather, innermost secondaries and coverts, some median and lesser coverts are moulted Feb. to June, but not rest of wings or



The Knot (*Calidris c. canutus*). Female, winter.

tail-feathers, and sometimes one or two other winter feathers are retained. Crown black-brown, feathers edged pink-cinnamon and greyish-white ; nape pink-cinnamon or greyish-white narrowly streaked

black-brown ; mantle and scapulars black-brown, feathers marked pink-cinnamon and tipped greyish-white ; back sepia, feathers edged white ; lower-rump and upper tail-coverts white, feathers barred and marked dark brown, some suffused pink-cinnamon ; eye-stripe and cheeks pink-cinnamon ; lores, around eye, ear-coverts and sides of neck same narrowly streaked black-brown ; chin, throat, breast, flanks and belly same, some feathers faintly tipped white ; vent white intermixed with pink-cinnamon ; under tail-coverts white, sometimes irregularly marked or with narrow median streaks of black-brown and sometimes intermixed with pink-cinnamon feathers ; axillaries as winter ; new tail-feathers sepia or ash-brown, edged white or buff and occasionally marked buff ; wing as winter but innermost secondaries and coverts, new median and lesser coverts black-brown marked pink-cinnamon. *Female.*—As male but upper-parts with greyish-white edges predominating and not nearly so richly marked with pink-cinnamon ; under-parts paler and sometimes mixed with a few white feathers, sometimes barred sepia ; lower-belly more or less white ; vent white ; under tail-coverts white, sometimes faintly tinged pale pink-cinnamon with more numerous black-brown streaks and markings.

Nestling.—Down on crown mottled black-brown, cream and cinnamon-buff ; fore-head cream with an irregular median brown line ; nape greyish-white, down blackish at base ; remainder of

upper-parts marbled black-brown and cinnamon-buff and dotted and tipped with cream ; ear-coverts and cheeks creamy-yellow with irregular streaks and markings of black-brown and cinnamon-buff ; throat and breast white washed creamy-buff ; flanks greyish-white ; remaining under-parts white.

Juvenile.—Crown heavily streaked black-brown, feathers edged at sides light buff ; nape ash-brown, feathers with dark shafts ; mantle, scapulars, back and rump ash-brown or sepia, feathers with darker subterminal border and edged white, cream or buff ; those of lower-rump and upper tail-coverts white, irregularly barred and marked dusky or ash-brown ; loreal streak sepia ; under-parts as adult but sides of face and neck and most of under-parts more or less suffused buff, ash-brown streaks, bars and markings usually finer and less pronounced ; tail-feathers as adult but edged buff ; wing as adult but innermost secondaries and their coverts and median coverts as mantle (some median coverts lack brown border), lesser coverts sepia or dark ash-grey narrowly edged light buff or white.

First winter. Male and female.—As adult winter but distinguished by retained juvenile scapulars and wing-coverts. Juvenile body-plumage (not all scapulars), apparently central pair of tail-feathers, some innermost secondaries and coverts, some median and lesser coverts, are moulted Sept. to Dec., but not rest of wings or tail-feathers. *First summer*.—Moult apparently as adults though sometimes not so complete ; in few birds examined no tail-feathers had been renewed. Coloration as adults and can only be distinguished by retained juvenile wing-coverts with subterminal dark brown borders and white or buff tips, which are least abraded on innermost median coverts.

Measurements and structure.—♂ wing 162–171 mm., tail 50.5–66.5, tarsus 27.5–31, bill from feathers 30–34 (12 measured). ♀ wing 164–174, bill 31.5–38.5. Primaries : 1st minute, 2nd longest, 3rd 3–7.5 mm. shorter, 4th 11.5–18 shorter, 5th 22.5–30 shorter, 6th 34–42 shorter. Longest inner secondary between 4th and 6th primaries. Tail square, central pair longest, outer pair a little longer than rest. Bill stout, short, straight and considerably dilated ; nasal groove extending nearly to tip. Four toes, anterior ones slightly webbed at base. Tarsus scutellated anteriorly.

Soft parts.—Bill black ; legs and feet olive-green ; iris brown.

CHARACTERS AND ALLIED FORMS.—*C. c. rufa* (N. America) in summer has upper-parts less black and more plentifully margined with paler edgings of orange-cinnamon rather than pink-cinnamon and under-parts paler ; *C. c. rogersi* (E. Siberia) requires confirmation. *C. tenuirostris* (E. Siberia) is larger, has upper tail-coverts white and in summer no chestnut on under-parts. Distinguished from other British *Calidris* by its larger size, short straight bill, ash-grey upper-parts of adult in winter and russet under-parts in summer, subterminal dark bars and whitish edges to ash-brown feathers of upper-parts of juvenile.

FIELD-CHARACTERS.—Occurs on sandy shores and mud-flats in

flocks. In breeding plumage under-parts chestnut, in winter white, but in either dress Knot is recognized by its size (considerably larger than Dunlin and Sanderling), short legs and plump form, and habit of feeding in densely packed masses, the birds as they travel over the sands suggesting a moving carpet. In flight wing shows a white bar and, at close-quarters, black bars are apparent on white upper tail-coverts. Call a hoarse grunting "knut, knut," which when uttered by many birds in concert becomes a sustained twitter. In nesting-season male, flying at great height in wide circles over breeding-grounds has a flute-like song, described by Feilden as "tullawee-tullawee-whee-whee."

BREEDING-HABITS.—Haunts stony tablelands, with very sparse vegetation. *Nest.*—A cup-shaped hollow in stony ground, lined with fragments of lichens. *Eggs.*—4, pyriform, ground-colour greenish-grey, boldly or finely spotted and blotched with blackish and bluish-grey shellmarks. Average of 14 eggs, 43×30 . Max. : 44×31 . Min. : 41×30 and 42×29 mm. (Goebel). *Breeding-season.*—Last fortnight June and early July. *Incubation.*—Apparently by both sexes, but chiefly by female. Period not exactly known. Single brooded.

FOOD.—Varied, including insects; hymenoptera, diptera, larvæ of lepidoptera (*Dasychira*), etc. Also many forms of land, fresh and salt water mollusca (*Littorina*, *Rissoa*, *Paludestrina*, *Tellina*, etc.); small crustacea (Gammaridæ); spiders and earthworms. Buds of plants such as *Saxifraga oppositifolia* and algæ are also taken during the summer.

DISTRIBUTION.—*British Isles.*—Winter-visitor and passage-migrant (end July to end Nov. and early March to end May and occasionally later). Most abundant east coasts Great Britain, common south, and west coasts England and in Solway, but north of Clyde, as in Hebrides, and apparently Orkneys and Shetlands scarce. Common east and north coasts Ireland, but scarce elsewhere. Occasional inland. Extensive autumn and spring passage-movements of birds wintering further south, and in severe weather many of our winter-visitors pass south.

DISTRIBUTION.—*Abroad.*—Breeds in Arctic regions, New Siberian Islands, Taimyr Peninsula in Siberia, perhaps Iceland, Greenland, migrates south as far as south Africa, India, Australia, and New Zealand. Replaced by closely allied subspecies in N. America, migrating to S. America, as far as Patagonia, but exact distribution not yet known, adults from Alaska and Greenland require further study.

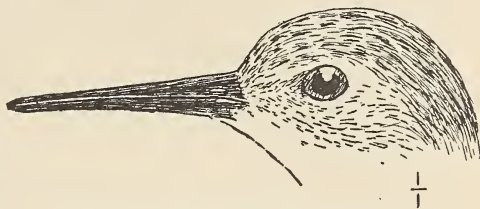
CALIDRIS ALPINA

390. *Calidris alpina alpina* (L.)—THE DUNLIN.

TRINGA ALPINA Linnæus, Syst. Nat., ed. x, i, p. 149 (1758—Lapland).
Tringa alpina Linnæus, Yarrell, III, p. 377; Saunders, p. 583.

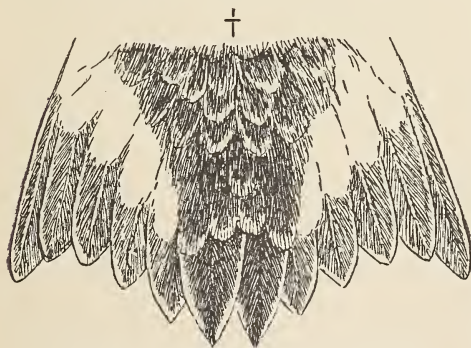
DESCRIPTION.—*Adult male and female.* *Winter.*—Crown, nape, mantle and scapulars ash-brown, centre of feathers darker giving a

streaked appearance, those of mantle and scapulars with faint white edges ; back, rump and upper tail-coverts black-brown, feathers edged ash-brown, sides of back, rump and lateral upper tail-coverts white ; ear-coverts, cheeks and sides of neck white streaked ash-brown ; from base of upper mandible over and behind eye, a white band, more or less streaked ash-brown above and behind eye ; loreal streak ash-brown ; chin and throat white ; breast white more or less clouded pale ash-brown, and narrowly streaked ash-brown ; sides



The Dunlin (*Calidris a. alpina*). Male adult, winter.

of belly sometimes spotted dusky or more or less washed ash-brown ; remaining under-parts white ; tail-feathers pale ash-brown faintly margined white, inner webs of central pair black-brown ; primaries black-brown, paler on inner webs and shading to white at utmost base, 6th and succeeding with white borders towards base of outer webs, increasing in extent on inner ones, shafts white ; secondaries black-brown, tipped white, inner webs paler and bases white, those next innermost more or less white, innermost and coverts as scapulars ; primary-coverts black-brown with white tips, most pronounced on inner ones ; greater coverts ash-brown, broadly tipped white ; median and lesser coverts ash-brown with dark shafts and whitish edges. This plumage is acquired by a complete moult July to Nov. *Summer*.—The body-feathers (not all scapulars, nor all feathers of back and rump), very occasionally central pair



The Dunlin. Tail and upper tail-coverts spread.

of tail-feathers or an odd tail-feather, sometimes some innermost secondaries and coverts, but not rest of tail-feathers nor wings are moulted March to June ; sometimes a few winter-feathers are retained on mantle. Crown black-brown, feathers edged at sides pink-cinnamon ; nape dusky-white or buffish streaked dusky, sometimes suffused pink-cinnamon ; mantle, scapulars,

and new feathers of back black-brown, broadly edged and marked orange-cinnamon ; upper tail-coverts black-brown, tipped and notched, and sometimes irregularly marked, orange-cinnamon ; eye-stripe white spotted dusky ; ear-coverts whitish-buff ; cheeks and

sides of neck white, narrowly streaked or spotted black-brown; chin white; throat dusky-white streaked black-brown; breast white or buff heavily streaked black; flanks white sometimes marked sepia; belly black, feathers with faint white edges and with white bases often imperfectly concealed and more or less intermixed with white feathers (amount of black varies individually); vent white, sometimes some blackish spots; under tail-coverts white, some spotted dusky; new tail-feathers black-brown narrowly edged and sometimes marked pink-cinnamon; wing as winter but new innermost secondaries and coverts as scapulars.

Nesting.—Down of fore-head yellow-buff; a median black-brown line from base of upper mandible to crown, another from lores to eye; crown variegated yellowish-tawny and black and bordered on either side by a light buff line; nape dusky, down tipped golden; rest of upper-parts yellowish-tawny varied black and minutely dotted light buff; eye-stripe tawny or yellow-buff; ear-coverts, cheeks and sides of neck whitish or yellow-buff; rest of under-parts white, breast suffused yellow-buff.

Juvenile. Male and female.—Crown, mantle and scapulars black-brown, feathers with light or ochraceous-buff edges; nape ash-brown streaked dusky and more or less washed light or ochraceous-buff; back, rump and central upper tail-coverts ash-brown, sometimes shaded darker, feathers edged ochraceous-buff, some central tail-coverts black-brown; indistinct band from fore-head above eye white or buff streaked dusky; ear-coverts, cheeks and sides of neck light buff, narrowly streaked dusky; chin and throat white; lower-throat and upper-breast greyish suffused buff and streaked and spotted sepia; flanks white (sometimes washed buff) with large dusky spots or streaks; belly white more or less spotted and blotched dusky-brown; rest of body-plumage as adult winter; tail-feathers as adult but edged light buff (indistinctly on outer ones); wing as adult but innermost secondaries and coverts ash-brown, shaded darker centrally and edged light or ochraceous-buff; median and lesser coverts ash-brown fringed warm or ochraceous-buff.

First winter.—As adult winter but distinguished by some retained juvenile scapulars, feathers of back and rump and innermost secondaries and wing-coverts. The juvenile body-plumage (usually not feathers of back and rump, nor all scapulars), some innermost secondaries and coverts, some median and lesser coverts, but apparently not tail-feathers and not rest of wings are moulted Aug. to Nov. *First summer.*—Moult as adult but apparently central tail-feathers are not moulted. Like adults and only to be distinguished by buff edges of retained juvenile wing-coverts, those of innermost median being usually least abraded.

Measurements and structure.—♂ wing 106–110 mm., tail 46–52, tarsus 21–25, bill from feathers 25–30 (12 British breeding birds measured). ♀ wing 110–116 (one 120), tarsus 22–26.5, bill 28–33 (17 British breeding birds measured). ♂ wing 110–120, bill 26–34.

♀ wing 110–122, bill 29–37 (British-taken birds, not breeding). Primaries : 1st minute, 2nd longest, 3rd 2–4 mm. shorter, 4th 7–10 shorter, 5th 15–19 shorter, 6th 22–29 shorter. Longest innermost secondary between 3rd and 6th primaries. Tail short, central pair longest, lateral pair slightly exceeding rest. Bill longer than head, straight, tapering, slightly decurved at tip, both mandibles grooved nearly to tip. Tarsus scutellated. Four toes, unwebbed.

Soft parts.—Bill black ; feet dark olive ; iris brown.

CHARACTERS.—*C. a. pusilla* (W. Siberia) requires further confirmation ; *C. a. sakhalina* (N.E. Siberia, northern N. America) is larger (♂ wing 117–125 mm., bill 31.5–34.5. ♀ wing 118–128, bill 35–41) and in summer has brighter upper-parts, nape whiter, chin, throat and breast whiter and less heavily streaked black-brown, winter plumage not distinguishable from that of *C. a. alpina*. Dunlin is distinguished from its near allies in summer adult by black, and juvenile by spotted, breast, in winter by ash-brown streaks on breast, centre of which in Sanderling is uniform white, and by black-brown upper tail-coverts which are white in Curlew-Sandpiper. For distinctions of *C. maculata*, *C. acuminata* and *C. bairdii* see under those species.

FIELD-CHARACTERS.—Nests on boggy moorlands, low-lying peat-mosses and salt-marshes. Our commonest shore-bird, often congregating in huge flocks on sand-banks and mud-flats, and not uncommon inland on migration. Sociable, consorts habitually with Ringed Plovers and other small waders. At all seasons long, rather stout and slightly decurved bill, restless activity and round-shouldered pose are diagnostic. Adult in summer distinguished from other small waders by black patch on lower-breast. Young in autumn have mottled chestnut and black upper-parts and black streaks on sides of upper-breast and flanks. In winter upper-parts are grey, darker than Sanderling's, and streaked, and there is an obscure greyish breast-band. An indistinct wing-bar—not conspicuous as in Sanderling—shows in flight, but narrow white sides of uniformly coloured central area of rump and tail are similar. Trilling love-song in flight above nesting-place. Call-note a long-drawn “dwee.” In winter a soft “purre,” often uttered in chorus.

BREEDING-HABITS.—Haunts moorlands and rough pastures, usually with marshy ground close at hand. *Nest*.—Neat cup of dry bents, well hidden in tussock of grass or lined with leaves of bilberry or salix among heather. *Eggs*.—Normally 4, occasionally 3 only or rarely 5, 6 once recorded ; colour variable, ranging from pale blue-green to yellowish or ochraceous sometimes very boldly blotched or spotted, but in other cases finely speckled with rich chocolate-brown and ashy-grey shellmarks. Markings often show signs of rotatory movement in oviduct. Average of 100 eggs, 34.3×24.4 . Max. : 38.3×25.4 and 35×25.8 . Min. : 31.3×23.2 and 32×23 mm. *Breeding-season*.—About second or third week May onward in British Isles according to latitude. *Incubation*.—By

both sexes (Slater and Manniche). Period : hatches on 22nd day (Evans). Probably single brooded, but eggs found up to July.

FOOD.—Mainly animal, little vegetable matter recorded. Mollusca (*Tellina*, *Littorina*, snails and slugs) ; worms ; crustacea (shrimps and sandhoppers), insects, including coleoptera (*Helophorus* and weevil sp ?), diptera (*Tipula*, and pupæ of *Musca*), etc. Also spiders. Fragments of grass and seeds have occasionally been recorded.

DISTRIBUTION.—*British Isles*.—Summer-resident (to what extent migrant is uncertain), winter-visitor and passage-migrant (mid-July to mid-Nov. and early March to early June), weather-movements, Nov.–Feb., frequent. Breeds sparingly moors Cardigan, Denbigh and Merioneth, (formerly Dee marshes), Lancs., Yorks. and Derby borders, north and north-west Yorks., and Tees marshes ; northwards more abundantly both moors and coast-marshes, and most Hebrides, Orkneys and Shetlands. Has bred Cornwall, Devon, Somerset, and Lincs. In Ireland breeds small numbers many parts Leinster, Connaught, and Ulster. Many immigrants arrive autumn and until their return in spring the bird is very numerous on all coasts, while many non-breeding birds stay throughout summer.

DISTRIBUTION.—*Abroad*.—Breeds in north Europe, south to Holland and coasts of north Germany, northern Russia east to Kolguev, Waigatz and apparently Novaya Zemlia, also Spitsbergen, Iceland and Færoes. Migrates in winter to Mediterranean, north Africa, Madeira and Canaries and Red Sea, also to India. Accidental in eastern N. America. Replaced by an allied race in east Asia and N. America, and by another in W. Siberia, which, however, requires further investigation and confirmation.

CALIDRIS FERRUGINEA

391. *Calidris ferruginea* (Brünn).—THE CURLEW-SANDPIPER.

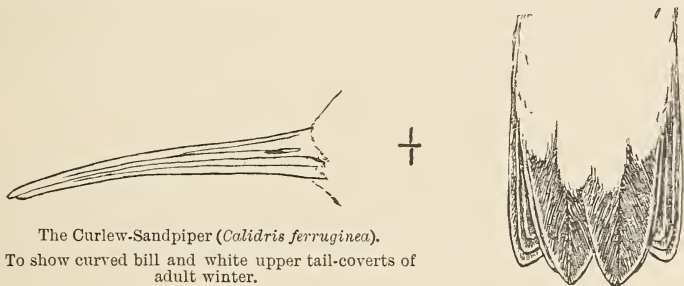
TRINGA FERRUGINEA Brünnich, Orn. Bor., p. 53 (1764—Iceland and Christiansoe).

Tringa subarquata (Güldenstädt), Yarrell, III, p. 413 ; Saunders, p. 591.

DESCRIPTION.—*Adult male and female*. *Winter*.—Crown ash-brown, nape paler, feathers with whitish edges and sometimes narrowly streaked dusky-brown ; mantle and scapulars ash-brown, shafts darker and feathers edged lighter ; back and rump ash-brown, feathers edged white ; sides of back and rump and all upper tail-coverts white ; ear-coverts, cheeks and sides of neck white, streaked dusky-brown ; eye-stripe, chin and throat white ; breast white faintly streaked brown, most pronounced at sides, which are shaded fulvous ; remaining under-parts white ; tail-feathers ash-brown, narrowly edged white, three outer pairs more or less ash-white on inner webs ; primaries sepia, inner webs more or less white towards base, 6th and succeeding with narrow white margins on outer webs ; secondaries ash-brown, edged white and inner webs largely white,

innermost as mantle ; primary-coverts sepia edged white ; wing-coverts ash-brown edged white, broadly on greater coverts, shafts dark. This plumage is acquired by complete moult July to Dec. N.B.—One Feb. example (N. Zealand) with 3rd primary of each wing in quill, one Feb. and two March (Australia) with outer primaries in quill.

Adult male. Summer.—The body-feathers (not all scapulars, nor all feathers of back and rump, nor all upper tail-coverts), usually tail-feathers, usually some innermost secondaries and coverts, some median coverts and sometimes one or two lesser coverts are moulted Feb. to July, but not rest of wings. (Sometimes some winter body-feathers are retained on upper- and under-parts and no median and lesser coverts are moulted.) Crown black-



The Curlew-Sandpiper (*Calidris ferruginea*).

To show curved bill and white upper tail-coverts of adult winter.

brown, feathers edged orange-cinnamon and faintly tipped white, white edges sometimes more or less pronounced ; nape orange-cinnamon, feathers narrowly tipped white and streaked or spotted sepia ; mantle, scapulars and new feathers of back and rump brown-black mostly edged ash-grey and more or less notched and tipped orange-cinnamon ; upper tail-coverts white (sometimes washed pink-cinnamon) barred black-brown ; chin whitish ; sides of face and neck and under-parts (except tail-coverts) russet, feathers edged white and sometimes some more or less indistinctly spotted sepia, flanks and sometimes lower-breast and belly barred sepia subterminally (flanks, belly and vent sometimes more or less intermixed with white) ; under tail-coverts white more or less tinged russet and with a few dusky bars ; tail-feathers as winter but central pair sometimes with an oval pink-cinnamon mark or edging ; wing as winter but new innermost secondaries and new wing-coverts as mantle ; new lesser coverts as winter. *Female.*—As male but feathers of upper-parts with more numerous ash-grey tips, not so plentifully and richly marked orange-cinnamon as male ; sometimes sides of face and of neck paler ; feathers of throat and breast usually paler and more broadly tipped white and usually more plentifully barred and spotted sepia ; belly and vent sometimes more or less white.

Nestling.—(Not examined.)

Juvenile.—Crown sepia, feathers edged buff ; nape ash-brown,

feathers edged white or buff ; mantle and scapulars black-brown or sepia, feathers edged cream or warm buff, scapulars darker sub-terminally ; back and rump ash-brown, feathers with faint buff tips ; upper tail-coverts as adult but with faint terminal dusky lines ; ear-coverts, cheeks and sides of neck cream or white streaked dusky ; lower-throat and breast pale or pronounced buff, feathers of lower-throat and sides of breast with dusky shafts giving a streaked appearance ; flanks and belly pale buff or white ; remaining underparts as adult winter ; tail-feathers as adult but more broadly tipped white or buff ; wing as adult but innermost secondaries and coverts as scapulars ; median and lesser coverts pale sepia or ash-brown edged buff.

First winter.—As adult winter but distinguished by buff edges of median (especially innermost) and lesser coverts. The juvenile body-feathers (not all scapulars nor all feathers of back and rump), sometimes central pair of tail-feathers, innermost secondaries and coverts, some median and lesser coverts are moulted Sept. to Dec., but apparently not rest of tail nor of wings. *First summer*.—Not examined. Some birds shot in spring were in full moult into winter plumage and were moulting remiges as well.

Measurements and structure.—♂ wing 122–137 mm., tail 41–49, tarsus 27–31.5, bill from feathers 33–42 (12 measured). ♀ wing 125–135, bill 31–42. Primaries : 1st minute, 2nd longest, 3rd 2.5–5 mm. shorter, 4th 9.5–12 shorter, 5th 18–21 shorter, 6th 27–32 shorter. Longest inner secondary between 5th and 6th primaries. Bill longer than head, slender, tapering, considerably decurved towards tip. Other structure as in *C. a. alpina*.

Soft parts.—Bill olivaceous-black ; legs olivaceous tinged brown ; iris black-brown.

CHARACTERS.—No subspecies recognized. White upper tail-coverts and decurved bill are distinctive characters.

FIELD-CHARACTERS.—Occurs in spring and autumn on mud-flats and in estuaries, and, less frequently, on sewage-farms and shores of inland waters. Among Dunlins, with which it usually consorts, is identified by its longer legs, slender form, graceful pose and upright carriage, and, in flight, by its white rump, at a distance too great to make out the longer, finer and more decurved bill. Chestnut colour of adult in spring is unmistakable. Most autumn birds are immature, and differ from adults—grey above and white below—by broad pale buff edges of feathers of back and pinkish-buff tinge on breast and flanks. Coward says flocks in autumn maintain a low twitter. Miss Haviland describes alarm-note at breeding-places as a shrill “ wick-wick-wick.”

BREEDING-HABITS.—A bird of the arctic tundra. *Nest*.—A deepish hollow in moss on a dry ridge, often several pairs breeding not far apart. *Eggs*.—Normally 4, sometimes 3 only ; ground-colour greenish-grey, with rich dark red-brown blotches and spots and purplish shellmarks. Average of 12 eggs, 36.7×25.6 . Max. : 39.6

$\times 25.6$ and 35.4×26.2 . Min.: 34.6×25.1 and 36.6×25 mm.
Breeding-season.—Last week June and early July on the Taimyr.
Incubation by both sexes. Period not known. Single brooded.

Food.—Small crustacea (sandhoppers, etc.); worms, and insects, including coleoptera; diptera and their larvæ, etc.

DISTRIBUTION.—*British Isles*.—Passage-migrant (late July–Oct. occasionally Nov. and very rarely winter months and April–June, exceptionally July). Chiefly east coast Great Britain and south coast England, scarce west side, rare I. and unknown O. Hebrides, scarce Shetlands, unknown Orkneys and extreme north and north-west Scottish mainland. In Ireland, chiefly autumn, east and north coasts. Much rarer, especially Scotland and Ireland, in spring. Occasional inland.

DISTRIBUTION.—*Abroad*.—Breeds in arctic regions of Asia, winters in Africa (from Mediterranean to tropical and south Africa), India, Malay Peninsula, and even Australia and New Zealand. Casual in N. and S. America.

CALIDRIS MINUTA

392. *Calidris minuta* (Leisl.)*—THE LITTLE STINT.

TRINGA MINUTA Leisler, Nachträge zu Bechst. Naturg. Deutschl., p. 74 (1812—Near Hanau on the Main).

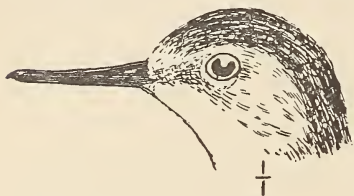
Tringa minuta Leisler, Yarrell, III, p. 386; Saunders, p. 585.

Erolia minuta minuta (Leisl.), Hand-List (1912), p. 174.

DESCRIPTION.—*Adult male and female*. *Winter*.—Fore-head white; crown, nape, mantle and scapulars ash-brown (paler on nape), feathers with brown shaft-streaks and whitish edges and those of crown and mantle and some scapulars shaded darker centrally; back and rump dark sepia, feathers edged ash-brown; central upper tail-coverts black-brown; sides of back, rump and lateral upper tail-coverts white; an ill-defined eye-stripe white streaked dusky; lores, ear-coverts, cheeks and sides of neck white, more or less streaked dusky-brown; sides of breast white faintly streaked dusky; remaining under-parts white; tail-feathers pale ash-brown, faintly tipped white, central pair dark sepia; primaries sepia, inner webs paler with white shafts, 6th and succeeding with faint white margins on outer webs; secondaries sepia, paler on inner webs, tips and bases white, innermost as mantle; primary-coverts black-brown, inner ones tipped white; greater coverts ash-brown, broadly tipped white; median coverts ash-brown with lighter edges and dark shafts; lesser coverts dark sepia, faintly tipped white or buff. This plumage is acquired by complete moult Aug. to Dec. *Summer*.—The body-feathers, tail-feathers, primaries, secondaries and their coverts, innermost secondaries and coverts, some median and lesser

* According to Buturlin both *C. minuta* and *ruficollis* nest in E. Siberia, and stronger, shorter tarsus distinguishes latter species.—E.H.

coverts are moulted March to May. Sometimes some winter body-feathers are retained and rectrices and remiges are not moulted. Fore-head white; crown orange-cinnamon streaked brown-black, feathers narrowly edged white; nape paler narrowly streaked dusky; mantle and scapulars brown-black broadly margined orange-cinnamon and tipped ash-grey; back, rump and upper tail-coverts black-brown, feathers edged orange-cinnamon; sides



The Little Stint (*Coliadris minuta*).
Female adult, winter.

of back, rump and lateral upper tail-coverts as winter; ear-coverts, cheeks and sides of neck orange-cinnamon streaked dusky; chin and throat as winter; breast more or less washed pink-cinnamon, feathers broadly edged white and spotted and shaded dusky most pronounced at sides of breast; remaining under-parts white; tail-feathers as winter but two central

pairs edged orange-cinnamon; wing as winter but innermost secondaries and coverts and new median and lesser coverts black-brown broadly edged orange-cinnamon.

Nestling.—Down on fore-head warm buff with a black-brown median line; nape ochraceous-buff; crown and upper-parts cinnamon-rufous mottled with black, tipped white or buff; a black line from lores to eye; cheeks, eye-stripe and upper-breast ochraceous-buff; remaining under-parts white.

Juvenile.—Fore-part of fore-head white; crown black-brown, feathers edged buff; nape greyish-white streaked dusky; mantle and scapulars black-brown, feathers edged ochraceous-tawny or warm buff and cream; back, rump and central upper tail-coverts black-brown, feathers edged ochraceous-tawny; lores dusky; breast suffused light buff and sides shaded or streaked dusky; rest of under-parts as adult; tail-feathers as adult but central pair edged tawny; wing as adult but innermost secondaries and coverts as scapulars; median coverts ash-brown or sepia edged buff; lesser coverts sepia, faintly tipped buff.

First winter.—As adult winter but distinguished by worn buff edges to juvenile wing-coverts. The juvenile body-feathers (not all feathers of back and rump nor all scapulars), occasionally central pair of tail-feathers, some innermost secondaries and coverts, some median and lesser coverts are moulted Sept. to Jan. but not rest of wings or tail-feathers. *First summer*.—Moult as in adult and plumage like adults and only to be distinguished by buff edges to retained juvenile wing-coverts.

Measurements and structure.—♂ wing 90–102 mm., tail 34–42, tarsus 19–22, bill from feathers 17–19.5 (12 measured). ♀ wing 94.5–102, bill 18–20. Primaries: 1st minute, 2nd longest, 3rd equal or 2–4 mm. shorter, 4th 5–8 shorter, 5th 12–16 shorter, 6th 20–23 shorter. Longest inner secondary between 4th and 8th

primaries. Bill short, straight, slender and slightly enlarged at tip. Other structure as in *C. a. alpina*.

Soft parts.—Bill black ; legs and feet black ; iris black.

CHARACTERS AND ALLIED SPECIES.—*C. ruficollis* (E. Siberia) in winter has upper-parts greyer and in summer chin, throat and sides of neck cinnamon-rufous ; juveniles indistinguishable. For differences of *C. minutilla* see under that species. *C. subminuta* (N.E. Asia) is distinguished by its long middle toe, 22.5–25 mm. (in *C. minuta* not exceeding 19.5) and darker upper-parts. *C. temminckii* has 3 outer pairs of tail-feathers white. Small size and toes not webbed distinguish the Little Stint from other British waders.

FIELD-CHARACTERS.—A diminutive Dunlin, but bill shorter and straight and black breast-spot lacking. Occurs in similar places and at same seasons as Curlew-Sandpiper, and like it usually permits approach within a few paces. Most autumn birds are young, which are not so grey as winter adults, have throat and upper-breast washed warm buff, white fore-head, cheeks and eye-brows, and buff and white marks on back. More lively in action and even quicker on wing than Dunlin with which it often consorts. Cry on rising a low, soft “wick-wick-wick.” Miss Haviland describes alarm-note at breeding-places as “drrrrt.”

BREEDING-HABITS.—Found in grassy marshes near shore, on tundra and among dwarf willows. *Nest*.—Cup-shaped depression in swampy ground lined with leaves of *Salix*, but not bents. *Eggs*.—Normally 4, pyriform, varying from pale greenish to buffish-stone, generally rather more boldly marked than those of Temminck’s Stint and sometimes with large rich red-brown blotches and spots as well as a few ashy shellmarks, but others are quite finely spotted. Average of 100 eggs, 28.8×20.7 . Max. : 31.7×20.3 and 30×21.4 . Min. : 26.7×20 and 28.7×19.6 mm. *Breeding-season*.—End June and July. *Incubation*.—By both sexes, but chiefly by female. Period unknown. Single brooded.

FOOD.—Small mollusca (*Truncatella*, etc.), worms, small crustacea (shrimps and sandhoppers), and insects, including coleoptera, diptera (Tipulidæ and larvæ of mosquito), trichoptera (caddis flies) and seeds of various shore-plants.

DISTRIBUTION.—*British Isles*.—Passage-migrant (end July to early Nov., rarely later), very rare anywhere spring (end March–mid-June, exceptionally July). Regular autumn (but varying numbers), east and south-east coasts England and south-east Scotland ; irregular and scarce, north of Aberdeen (but recorded to Shetlands), west coasts Great Britain (including some I. and O. Hebrides) and south coast England. In Ireland apparently regular autumn east coast, very rare elsewhere ; only one doubtful spring-record. Occasional inland.

DISTRIBUTION.—*Abroad*.—Inhabits Siberian and north Russian tundras (Murman Coast) and islands (Novaya Zemlia, Kolguev,

Waigatz, etc.) to Norway, and migrates south to Africa and western parts India. Casual Madeira, Canaries, Azores. According to Buturlin to east Asia, where, however, mostly replaced by *C. ruficollis*.

CALIDRIS MINUTILLA

393. *Calidris minutilla* (Vieill.)—THE AMERICAN STINT.

TRINGA MINUTILLA Vieillot, Nouv. Dict. d'Hist. Nat., nouv. éd., xxxiv, p. 466 (1819—Nova Scotia to the Antilles).

Tringa minutilla Vieillot, Yarrell, III, p. 396; Saunders, p. 587.

Erolia minutilla minutilla (Vieill.), Hand-List (1912), p. 175.

DESCRIPTION.—*Adult male and female.* *Winter.*—Similar to Little Stint but distinguished by having shafts of feathers of upper-breast dusky giving a streaked appearance; in Little Stint upper-breast is white. This plumage is acquired by complete moult from autumn to Dec. *Summer.*—The body-feathers, tail-feathers, innermost secondaries and coverts, some median and lesser coverts are moulted March to June and judging by their fresh appearance in some specimens primaries and secondaries are also renewed though none have been examined actually in quill (some worn winter body-feathers are sometimes retained). Upper-parts much darker than in Little Stint, feathers tipped ash-brown (instead of ash-grey) and many edged same, some with narrow edges of pale orange-cinnamon or buff, not broadly edged orange-cinnamon as in Little Stint; back, rump and upper tail-coverts edged buffish-white instead of orange-cinnamon; ear-coverts, cheeks, and sides of neck white streaked sepia; two central pairs of tail-feathers faintly edged warm buff; wing as winter but innermost secondaries and coverts, new median and lesser coverts sepia edged pale orange-cinnamon.

Nestling.—(Not examined.)

Juvenile.—As Little Stint but upper-parts darker; crown, mantle and scapulars brown-black, feathers edged tawny, some scapulars edged cream; under-parts as Little Stint but light buff of breast sometimes indistinctly streaked dusky; wings and tail as in Little Stint.

First winter.—As adult winter but distinguished by worn buff edges to median and lesser coverts and tawny edges to innermost median coverts. The juvenile body-plumage (not all scapulars), sometimes tail-feathers, some innermost secondaries and coverts are moulted in autumn but not rest of wings. *First summer.*—Moult as in adult after which birds become like adults but distinguished by worn buff edges to retained juvenile wing-coverts.

Measurements and structure.—♂ wing 84–91 mm., tail 35–40, tarsus 17.5–20, bill from feathers 17–19.5 (12 measured). ♀ wing 85–94, bill 17.5–20.5. Primaries: 1st minute, 2nd longest, 3rd equal or 2–3.5 mm. shorter, 4th 3–6 shorter, 5th 9–11.5 shorter, 6th 14–18 shorter. Longest inner secondary between 4th and 8th

primaries. Bill as in Little Stint but more slender and tapering. Other structure as in Dunlin.

Soft parts.—Bill blackish ; legs and feet pale brownish, greenish or yellowish ; iris dark brown.

FIELD-CHARACTERS.—Smallest American shore-bird, to be confused only with *Ereunetes*. Tone of plumage brownish, breast obscured by dark streaking. Bill more slender than in *Ereunetes*, straight or just appreciably decurved in females. Legs and feet *pale*, brownish, greenish or yellowish. Favourite haunts marshes and mud-flats, rarely on sandy beaches, sometimes on fresh-water meadows. Gregarious but frequently scatter singly among marsh-grass when feeding. Rather silent on ground and noisy on the wing. Flight-note a grating “krreep,” the *ēē* sound diagnostic. (J. T. Nichols.)

BREEDING-HABITS.—Haunts neighbourhood of water, small lakes, islets, etc. *Nest.*—Hollow in ground, lined with dry leaves and grasses. *Eggs.*—Four, stone-colour to pale greenish or more often yellowish in ground-colour, spotted and blotched with rich umber-brown and ashy-grey. Average of 20 eggs, 29.3×21.1 . Max. : 32×21.5 and 31.1×22 . Min. : 28×20.7 and 29.1×20.2 mm. *Breeding-season.*—Latter half June and early July. *Incubation.*—No details. Probably single brooded.

FOOD.—Shore-haunting insects, small crustacea and worms ; also seeds of various aquatic plants.

DISTRIBUTION.—*England.*—Four. Mount's Bay (Cornwall) Oct. 10, 1853. Northam Burrows near Bideford (Devon) Sept. 1869 and Aug. 22, 1892 (Saunders, p. 587). Near Mousehole (Cornwall) Sept., 1890 (J. Clark, *Zool.*, 1907, p. 286).

DISTRIBUTION.—*Abroad.*—Northern N. America, in winter from California, Texas, and North Carolina through West Indies and Central America to Brazil, Galápagos Islands, and Chile. On migration throughout N. America. Casual Greenland and Bermudas.

CALIDRIS TEMMINCKII

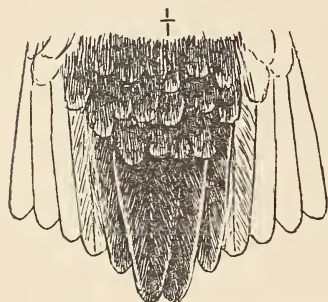
394. *Calidris temminckii* (Leisl.)—TEMMINCK'S STINT.

TRINGA TEMMINCKII Leisler, Nachträge zu Bechst. Naturg. Deutschl. pp. 63–73 (1812—Near Hanau on the Main).

Tringa temmincki Leisler, Yarrell, III, p. 398 ; Saunders, p. 589.

DESCRIPTION.—*Adult male and female.* *Winter.*—Fore-head greyish-white ; crown, nape, mantle and scapulars ash-brown tinged olive, shafts darker ; back, rump and upper tail-coverts black-brown, feathers edged lighter, sides of back and rump and lateral upper tail-coverts white ; indistinct eye-stripe white streaked ash-grey ; lores, ear-coverts, cheeks and sides of neck ash-brown ; chin and throat white ; breast white suffused pale ash-brown ; remaining under-parts white ; tail-feathers pale ash-brown, three outer pairs almost entirely white, central pair dark sepia tinged olive ; primaries sepia, paler on inner webs, 2nd with white shaft, remainder

with shafts brown, 5th and succeeding faintly margined white on outer webs ; secondaries sepia broadly tipped white, paler on inner webs, innermost ash-brown tinged olive ; primary-coverts black-brown, inner ones tipped white ; greater coverts sepia broadly edged white ; median and lesser coverts as mantle. This plumage is acquired by complete moult July to Dec. *Summer*.—The body-feathers, tail (more often central pair only and sometimes not any), innermost secondaries and coverts and apparently primaries, secondaries and their coverts, some median and lesser coverts are moulted



Temminck's Stint (*Calidris temminckii*).
Tail spread.

Feb. to May, sometimes some winter-feathers are retained on upper-parts. Crown and nape sepia, feathers edged warm buff ; mantle and scapulars ash-brown, feathers with dark shafts, some marked black-brown and plentifully interspersed with black-brown feathers edged warm buff ; back, rump and upper tail-coverts as winter ; from base of upper mandible to anterior corner of eye a whitish stripe streaked dusky ; ear-coverts, cheeks and sides of neck light buff streaked dusky ; breast washed warm buff and streaked dusky, feathers edged white ; remain-

ing under-parts as winter ; tail-feathers as winter but except three outer pairs edged warm buff ; wing as winter but new innermost secondaries and wing-coverts sepia tinged olive and edged buff.

Nestling.—Like nestling *C. minuta* but fore-head and nape pale yellow ; crown and upper-parts intermixed with pale yellow-buff instead of cinnamon-rufous ; under-parts as in *C. minuta*, but sometimes paler.

Juvenile.—Crown sepia, feathers edged warm buff ; nape ash-brown ; mantle and scapulars olive-brown, feathers edged warm buff, some shaded centrally, others subterminally bordered sepia ; centre of back, rump and upper tail-coverts black-brown, feathers edged warm buff ; chin and throat white ; ear-coverts, cheeks, sides of neck, lower-throat and breast ashy, feathers suffused and tipped buff ; rest of plumage as adult winter ; tail-feathers as adult summer ; wing as adult but innermost secondaries and coverts and median coverts olive-brown, edged warm-buff and mostly with a subterminal sepia bar or border ; lesser coverts black-brown, tipped warm buff.

First winter.—As adult winter but distinguished by worn buff edges to median and lesser coverts and to feathers of back and rump when not too abraded. The juvenile body-feathers (not all those of back and rump nor all scapulars), sometimes central pair of tail-feathers, innermost secondaries and coverts, some median and lesser coverts are moulted Aug. to Dec. but not rest of wings and apparently not rest of tail-feathers. *First summer*.—Moult as

adults and plumage like adults but distinguished by retained juvenile median and lesser coverts with buff edges (least abraded on innermost median).

Measurements and structure.—♂ wing 90.5–100 mm., tail 38–49, tarsus 16–18, bill from feathers 16–18 (12 measured). ♀ wing 92–103, bill 16.5–20. Primaries : 1st minute, 2nd longest, 3rd equal or 2–3 mm. shorter, 4th 4–7 shorter, 5th 11–14.5 shorter, 6th 17.5–22 shorter. Longest inner secondary between 3rd and 5th primaries. Tail-feathers graduated, central pair longest. Bill short, slender and tapering, not so stout as in *C. minuta*. Other structure as in *C. a. alpina*.

Soft parts.—Bill very dark brown ; legs and feet greenish-brown ; iris dark brown.

CHARACTERS.—No subspecies. White outer tail-feathers and brown shafts to all but 2nd primary distinguish it from all other Stints.

BREEDING-HABITS.—Breeds in neighbourhood of rivers, lakes, etc. *Nest.*—Hollow in ground, lined with grass bents. *Eggs.*—Normally 4, pyriform, varying from greenish-grey to stone or buff, spotted and speckled all over with deep reddish-brown and ashy-grey, but not showing much range of variation. Average of 100 eggs, 27.9 × 20.4. Max. : 30.5 × 20.8 and 28.8 × 21.5. Min. : 25.5 × 20.8 and 28.2 × 19.4 mm. *Breeding-season.*—Latter part June, but sometimes early July. *Incubation.*—By both sexes, but apparently largely by male. Period unknown. Single brooded.

FOOD.—Chiefly insects, including coleoptera (larvæ of Staphylinidæ), diptera (mosquitos and larvæ). Also worms.

DISTRIBUTION.—*British Isles.*—Rare and irregular passage-migrant chiefly autumn (late July to Sept.), very rarely spring (May). Irregular everywhere but most frequent from Norfolk southwards and along south coast England to Scilly. Elsewhere very rare vagrant—about seven from Dee to Solway, several from Lincs. to Northumberland, two or three east coast Scotland, four Fair Isle (May, June, Aug.), one co. Kerry (Jan., 1848).

DISTRIBUTION.—*Abroad.*—Breeding from northern Scandinavia eastwards to Tchukthi Peninsula, migrating south in winter through Europe and Asia to Mediterranean and north Africa, India, Ceylon, the Indo-Chinese countries, Japan and China.

CALIDRIS MACULATA

395. *Calidris maculata* (Vieill.)—THE AMERICAN PECTORAL SANDPIPER.

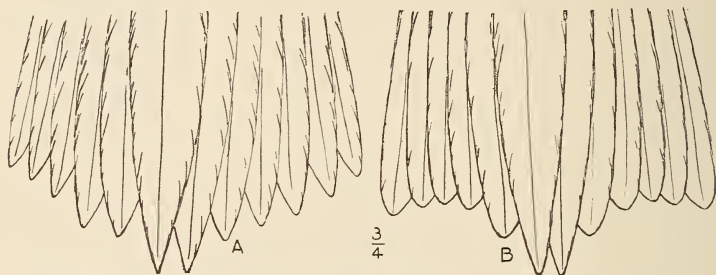
TRINGA MACULATA Vieillot, Nouv. Dict. d'Hist. Nat., nouv. éd., xxxiv, p. 465 (1819—Antilles or southern U.S.).

Tringa maculata Vieillot, Yarrell, III, p. 368 ; Saunders, p. 579.

Erolia maculata maculata (Vieill.), Hand-List (1912), p. 175.

DESCRIPTION.—*Adult male and female.* *Winter.*—Crown black-brown, feathers edged light pink-cinnamon ; nape whitish-buff

streaked sepia; mantle and scapulars black-brown, edges of feathers ash-brown and sometimes tinged light pink-cinnamon; back, rump and upper tail-coverts black-brown, feathers narrowly edged warm buff; sides of back, rump and lateral upper tail-coverts white, latter irregularly marked brown; indistinct eye-stripe buffish-white streaked dusky; ear-coverts, cheeks and sides of neck buffish-white streaked sepia; chin and throat white, slightly spotted dusky; lower-throat and breast pink-buff or cream-white, feathers heavily streaked dusky-brown; flanks white, some washed fulvous; under tail-coverts white with brown shafts; remaining under-parts white; central tail-feathers sepia or black-brown, edged light or pink-buff, remainder ash-brown edged white; primaries sepia, 2nd with white, rest with pale brown, shafts; secondaries sepia (paler on inner webs), tipped and edged white, innermost sepia or black-brown edged tawny or pink-buff; primary and greater coverts sepia, tipped white; median and lesser coverts



Outline of tails of (A) The Siberian Pectoral Sandpiper (*Calidris acuminata*), (B) The American Pectoral Sandpiper (*C. maculata*), to show difference in shape.

sepia, edges ash-brown sometimes tinged light pink-cinnamon. This plumage is acquired by complete moult; body-moult commences Aug., while wing and tail moult is delayed till winter or early spring. *Summer*.—The body-feathers (not all scapulars and apparently not feathers of back and rump), occasionally central pair of tail-feathers, some innermost secondaries and coverts, some median and lesser coverts are moulted Feb. to June, but not rest of wings or tail-feathers. Crown as winter but feathers edged tawny; nape heavily streaked black-brown, feathers edged light ochraceous-buff; mantle and scapulars black-brown, feathers tipped ash-brown and more or less edged at sides light ochraceous-buff and cinnamon, which sometimes completely replaces grey; remaining upper- and under-parts as winter; tail-feathers as winter but new central tail-feathers black-brown, edged tawny; wing as winter but new median and lesser coverts sepia, edged ochraceous and light buff.

Nesting.—Fore-head white, suffused yellow-buff; a black median band from base of upper mandible to crown; crown mottled black and tawny and dotted with irregular tufts of cream; nape

yellow-buff, down blackish at base; remaining upper-parts as crown but intermixed with yellow-buff, a black-brown line from lores to eye; cheeks and fore-neck white suffused yellow-buff; remaining under-parts white.

Juvenile.—Crown and nape as adult summer; mantle and scapulars black-brown, feathers edged tawny, ochraceous-buff and cream-white, remaining upper- and under-parts and tail as adult summer; wing as adult summer but median and lesser coverts sepia or black-brown, edged tawny, ochraceous and light buff.

First winter and first summer.—(Not examined.) N.B.—One March spec. in worn winter plumage with worn wings and tail and innermost median and greater coverts with buff and worn tawny edges is in body-moult apparently acquiring 1st summer plumage.

Measurements and structure.—♂ wing 136–146.5 mm. (one 150), tail 50.5–62, tarsus 27–30, bill from feathers 27.5–30.5 (12 measured). ♀ wing 127–143.5, bill 26.5–29.5. Primaries: 1st minute, 2nd longest, 3rd 2–5 mm. shorter, 4th 9–13 shorter, 5th 17–23 shorter, 6th 26.5–36 shorter. Longest inner secondary between 4th and 7th primaries. Tail with two central pairs longest, three outer pairs equal. Bill short, straight, slender and somewhat tapering. Other structure as in *C. a. alpina*.

Soft parts.—Bill greenish-black, base olive-green; legs clay-yellow; iris dark brown.

CHARACTERS.—No subspecies. Large size, absence of white upper tail-coverts, heavily streaked throat and breast and shape of tail distinguish this species.

FIELD-CHARACTERS.—Heavily streaked breast separated abruptly from white belly. Feeds on marshes and mud-flats, probing. At times associates with other species, and manœuvres in close ranked flocks of its own kind but when alighted to feed individuals scatter and are flushed singly. A stocky, short-necked, short-legged bird. Legs yellowish or greenish. Sluggish in taking wing, its pale grey tail with dark central feathers conspicuous, and wing with a pale lengthwise shade often noticeable. Flight very variable, at times swift, at times sluggish with measured wing-beats. Silent when feeding, rather noisy in air. Flight-note “kerr,” confusable with the “chrruk” of Semi-palmated Sandpiper but heavier and huskier; also a dissimilar short note when in flocks. (J. T. Nichols.)

BREEDING-HABITS.—A tundra haunting species. *Nest*.—Usually on dry ground such as banks of streams, or edge of pool, consisting of depression in ground lined with a little dry grass. *Eggs*.—Four, ranging from pale greenish to brownish-ochraceous in ground, pyriform in shape and spotted or blotched with umber-brown. Average of 13 eggs, 37.5×26.7 . Max.: 39.7×27.5 and 36.7×28 . Min.: 36×25.5 mm. *Breeding-season*.—Mid-June onward in Alaska. *Incubation*.—No details given.

FOOD.—Insects (small coleoptera and their larvæ), also vegetable matter (*Ulva latissima* and *Fucus* sp?).

DISTRIBUTION.—*British Isles*.—Vagrant. About forty-seven England, three Scotland, three Ireland, chiefly autumn, occasional spring. *England*.—Northumberland (two), Durham (two), Yorks. (five), Norfolk (nine), Suffolk (five or six), Kent (two), Sussex (seven), Devon (two), Cornwall (three), Scilly Isles (ten), Cumberland (one). *Scotland*.—Aberdeen, Argyll and Orkneys, one each. *Ireland*.—Portumna (Galway) (one), Belmullet (Mayo) (two).

DISTRIBUTION.—*Abroad*.—Breeds on arctic shores of western N. America and eastern Siberia. Winters in S. America, from Peru and Bolivia to Chile, Argentina and Patagonia. Rare or casual in Japan, Greenland, Hawaiian Islands.

CALIDRIS ACUMINATA

396. *Calidris acuminata* (Horsf.)*—THE SIBERIAN PECTORAL SANDPIPER.

TOTANUS ACUMINATUS Horsfield, Trans. Linn. Soc. London, XIII, p. 192 (1821—Java, winter-visitor).

Tringa acuminata (Horsfield), Saunders, pp. 579 and 580.

Erolia maculata acuminata (Horsf.), Hand-List (1912), p. 176.

DESCRIPTION.—*Adult male and female*. *Winter*.—Crown black-brown, feathers edged sandy-brown; nape same but streaks narrower and edges light buff; mantle and scapulars black-brown, feathers edged ash-brown; back, rump and central upper tail-coverts black-brown, feathers edged tawny; sides of back, rump and lateral tail-coverts white, latter with median dusky markings; eye-stripe white streaked dusky; ear-coverts dusky streaked sepia; cheeks and sides of neck buff-white, narrowly streaked sepia; chin and upper-throat white; lower-throat and breast spotted dusky-brown most pronounced at sides and more or less suffused buff; flanks white suffused fulvous; under tail-coverts white streaked sepia; remaining under-parts white; tail-feathers ash-brown edged white, central pair sepia edged pink-cinnamon; primaries sepia, shafts more or less white; secondaries sepia tipped white, paler on inner webs, innermost as mantle; primary-coverts dark sepia edged white; greater coverts ash-brown tipped white; median and lesser coverts ash-brown with dark shafts and whitish edges. This plumage is acquired by complete moult commencing with body-feathers in autumn, remiges and rectrices not being renewed till winter or early spring; several Feb. and March examples were moulting remiges and acquiring summer feathers; (one or two moulting remiges in Oct. were probably birds of previous year). *Summer*.—The body-feathers (apparently not all scapulars nor all feathers of back and rump), sometimes tail, innermost secondaries and coverts, usually some median and lesser

* American authors (*A.O.U. Checklist*, 3rd ed., 1910, p. 113) have adopted Latham's name *Tringa aurita* (Latham, *Ind. Orn. Suppl.*, p. LXVI, ex *Gen. Syn. Suppl.*, II, p. 314) but without reason, as the description disagrees almost entirely with that of the present species.—E.H.

coverts are moulted Feb. to May. N.B.—One (♀ March) in worn winter-plumage is moulting wings and tail and is acquiring new winter, not summer, feathers. Crown rich tawny, streaked black; nape pink-buff, narrowly streaked sepia; mantle and scapulars black-brown, feathers edged tawny and light ash-brown; rest of upper-parts as winter; ear-coverts buff streaked dusky; chin and throat white, heavily spotted sepia; sides of neck and breast pink-cinnamon, feathers with dusky-brown spots and V-shaped bars and edged white; flanks white or tinged pink-cinnamon and similarly barred; remaining under-parts, tail and wing as winter but new innermost secondaries and coverts sepia, edged tawny and ash-brown, new median and lesser coverts ash-brown, edged pink-cinnamon.

Nestling.—(Not examined.)

Juvenile.—Crown and nape as adult summer; mantle and scapulars brown-black edged ochraceous-tawny and cream; back, rump and upper tail-coverts as adult; eye-stripe white faintly spotted dusky; ear-coverts and sides of neck buff streaked sepia; cheeks white narrowly streaked or spotted sepia; chin and throat white, lower-throat warm buff narrowly streaked sepia; breast buff slightly streaked sepia at sides; flanks white washed buff; remaining under-parts as adult; tail as adult but outer pairs edged light buff or white, central pair edged ochraceous-tawny; wing as adult but innermost secondaries and coverts sepia or black-brown broadly edged ochraceous-tawny (without ash-brown edges), median and lesser coverts sepia margined buff-white, innermost median edged ochraceous-tawny, not ash-brown or cream-white as adult summer.

First winter.—As adult winter but distinguished by faded ochraceous-tawny tips to innermost lower median coverts and by worn light buff edges to retained juvenile coverts. Juvenile body-feathers (apparently not feathers of back and rump, nor all scapulars), sometimes central pair of tail-feathers, some innermost secondaries and coverts but not rest of tail-feathers and apparently not wings (one moulting 6th primary in each wing) are moulted Oct. to Jan. (Not many specimens examined.) *First summer*.—Apparently not to be distinguished with certainty from adult summer. N.B.—One (Feb.) acquiring summer plumage was also moulting remiges.

Measurements and structure.—♂ wing 127.5–138.5 mm., tail 45–58, tarsus 27–30.5, bill from feathers 23–27 (12 measured). ♀ wing 124–133, bill 23–29. Primaries: 1st minute, 2nd longest, 3rd sometimes equal, usually 2.5–4.5 mm. shorter, 4th 6–11 shorter, 5th 15–22.5 shorter, 6th 25–33 shorter. Longest inner secondary between 4th and 6th primaries or sometimes equals 2nd. Tail wedge-shaped, feathers pointed at tip, especially central pair. Bill short, slender and tapering. Other structure as in *C. a. alpina*.

Soft parts.—Bill black, base below brownish; feet (ad.) dull green-slate, (juv.) dirty (greyish) ochraceous; iris dark brown.

CHARACTERS.—No subspecies. Distinguished in all plumages by dark (not white) back, rump and upper tail-coverts and wedge-shaped tail.

BREEDING-HABITS.—Haunts grassy flats near sea and tundra but no definite information as to breeding-habits.

FOOD.—Only food recorded appears to be Gammaridæ picked up on shore.

DISTRIBUTION.—*England.*—One or two. Breydon (Norfolk) Aug. 29, 1892 (Seebohm, *Ibis*, 1893, p. 181). [One said taken near Yarmouth, Sept., 1848 (*l.c.*; cf. Gurney, *Zool.*, 1849, pp. 2392 and 2568).]

DISTRIBUTION.—*Abroad.*—North-east Siberia, Tchuktchi Peninsula to Lena. Passes through Kamtchatka and Commander Is. and Japan and China. Winters in Pacific Islands and Australia (rare New Zealand) to Sunda Islands, once India. Also occurring Alaska (? breeding), Pribilof Is., Unalaska, Queen Charlotte Is.

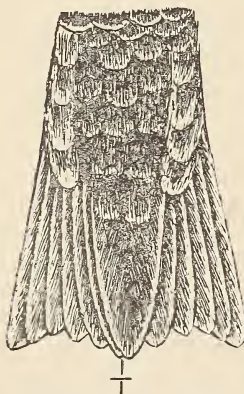
CALIDRIS BAIRDII

397. *Calidris bairdii* (Coues)—BAIRD'S SANDPIPER.

ACTODROMAS BAIRDII Coues, Proc. Acad. Sci. Philad., 1861, p. 194 (Great Slave Lake, Canada).

Heteropygia bairdi (Coues), E. Hartert, Bull. B.O.C., XI, p. 27; *Tringa bairdi*, Saunders, Brit. B., I, p. 15.

DESCRIPTION.—*Adult male and female.* *Winter.*—Crown streaked dark sepia, feathers edged ash-brown and light buff; nape same but streaks narrower; mantle and scapulars ash-brown, feathers with sepia centres or shaft-streaks and many edged pink-buff; back, rump and upper tail-coverts sepia edged sandy-buff; lateral tail-coverts white suffused pink-buff and marked ash-brown; eye-stripe white; ear-coverts, cheeks and sides of neck buff, narrowly streaked sepia; chin and throat white; breast buff, many feathers with sepia shaft-streaks giving streaked appearance, most pronounced on sides; remaining under-parts white; under tail-coverts with sepia shaft-streaks; tail-feathers ash-brown faintly edged white, central pair dark sepia edged ash-brown or white; primaries sepia, paler on inner webs, 6th and succeeding with narrow white border near base of outer web, shaft of 2nd white,



Baird's Sandpiper (*Calidris bairdii*) to show dark upper tail-coverts.

of remainder brownish-white; secondaries sepia (paler on inner webs), tipped white, innermost sepia edged sandy; primary-coverts sepia or black-brown, narrowly edged white; greater coverts ash-brown broadly edged white or light buff; median and

lesser coverts ash-brown with pink-buff or whitish edges, shaded darker centrally. This plumage is acquired by complete moult Aug. to Feb. or March. From few examined it appears that body-moult commences in Aug. but wing-moult is deferred till early spring, several having 2nd primary in quill and rest of remiges new Feb. and Mar. *Summer*.—The body-feathers are moulted in spring, sometimes wings but not usually tail. Coloration as winter but crown, nape, mantle and scapulars black-brown, feathers broadly edged light buff and ash-brown, sometimes scapulars and some feathers of mantle suffused cinnamon-buff; back and rump black-brown, feathers edged sandy-rufous; central upper tail-coverts black-brown tipped ash-brown, lateral ones white with V-shaped markings and barrings of black-brown or sepia.

Nestling.—Down on fore-head white; median black line from base of upper mandible to crown; crown and upper-parts variegated black and tawny and dotted with tufts of white; eye-stripe white; black line across lores to anterior corner of eye; cheeks, sides of neck and remaining under-parts white.

Juvenile.—Crown and nape sepia, feathers edged sandy or buff; mantle and scapulars dark sepia, feathers with fairly broad white edges; back, rump and upper tail-coverts as adult summer; breast more pink-buff than adult and more faintly streaked; remaining under-parts as adult; tail-feathers as adult but central pair edged buff; wing as adult but innermost secondaries and coverts, median and lesser coverts sepia or ash-brown edged white and pink-buff.

First winter.—As adult but distinguished by white or buffish-white edges to retained juvenile wing-coverts. The juvenile body-feathers (not all scapulars and not feathers of back and rump), some innermost secondaries and coverts, some median and lesser coverts are moulted in autumn but not rest of wings and not tail-feathers in birds examined. *First summer*.—Apparently not to be distinguished with certainty from adult summer; moult as adult.

Measurements and structure.—♂ wing 116.5–127.5 mm., tail 45–59, tarsus 20–23, bill from feathers 22–23.5 (7 measured). ♀ wing 113–132, bill 23–25 (8 measured). Primaries: 1st minute, 2nd longest, 3rd equal or 2–4 mm. shorter, 4th 6–9.5 shorter, 5th 14–19 shorter, 6th 21–28 shorter. Longest inner secondary between 5th and 7th primaries. Tail short, central pair longest, outer pair equal or slightly longer than next. Bill straight, short, slender and tapering. Other structure as in *C. a. alpina*.

Soft parts.—Bill black; legs and feet black; iris brown.

CHARACTERS.—No subspecies. Absence of white upper tail-coverts, uniform white belly, short rounded central tail-feathers, dark secondaries and bill (shorter than in *C. a. alpina*), distinguish this species.

FIELD-CHARACTERS.—Most difficult of American Stints to distinguish in life. Closely resembles a small Pectoral Sandpiper, but less

distinctly streaked below, and area of streaking less extended. Above it averages less distinctly streaked or mottled. Upper tail-coverts never blackish. While size is not an absolutely reliable field-mark, bill is always much more slender. Absence of white on rump will always distinguish it from white-rumped Sandpipers, and it is much larger than either Temminck's or the Little Stint. (Ludlow Griscom.)

BREEDING-HABITS.—Said to breed in dry tundra. *Nest.*—Depression in ground, lined dead leaves. *Eggs.*—Normally 4, pyriform in shape, ranging from grey to ochreous in ground, thickly spotted with rich chocolate-brown of varying shades with ashy shellmarks and occasionally a black streak at large end. Average of 5 eggs, 34.2×24.3 . Max.: 35.5×24.4 and 34.7×24.5 . Min.: 32.7×24 mm. *Breeding-season.*—Second half June and early July. *Incubation.*—No details.

FOOD.—No exact data, but probably feeds on insects, small crustacea, etc.

DISTRIBUTION.—*Great Britain.*—Five. Young female Rye Harbour (Sussex) Oct. 11, 1900 (*ut supra*). One Hunstanton (Norfolk) Sept. 16, 1903 (J. H. Gurney, *Zool.*, 1909, p. 124). Adult female St. Kilda (O. Hebrides) Sept. 28, 1911 (W. E. Clarke, *Scot. Nat.*, 1912, p. 9). Rye Harbour female Sept. 16, 1912, male Sept. 23, 1914 (H. W. Ford-Lindsay, *Brit. B.*, VI, p. 193, VIII, p. 174).

DISTRIBUTION.—*Abroad.*—Breeds along arctic coast of North America and migrates south to Chile, Argentina, and Patagonia, once in south-west Africa and once near coast of Tchuktschi Peninsula.

CALIDRIS FUSCICOLLIS

398. *Calidris fuscicollis* (Vieill.)—BONAPARTE'S SANDPIPER.

TRINGA FUSCICOLLIS Vieillot, *Nouv. Dict. d'Hist. Nat.*, nouv. éd., xxxiv, p. 461 (1819—Paraguay. Ex Azara).

Tringa fuscicollis Vieillot, *Yarrell*, III, p. 373; *Saunders*, p. 581.

DESCRIPTION.—*Adult male and female.* *Winter.*—Crown, nape, mantle and scapulars ash-brown, feathers with lighter edges and shaded darker centrally; back and rump sepia, feathers edged greyish-white, sides of back and rump white; upper tail-coverts white irregularly marked brown, two central coverts sepia edged greyish-white; incomplete eye-stripe white streaked dusky; ear-coverts, cheeks and sides of neck white streaked dusky; chin and throat white; breast pale ash-brown, feathers edged white and narrowly streaked sepia; flanks white shaded ash-brown; remaining under-parts white; tail-feathers pale ash-brown, central pair sepia, all faintly edged white; primaries sepia, paler on inner webs, shaft of 2nd white, of others mostly white; secondaries sepia, paler on inner webs and tipped white, innermost sepia shading to ash-brown towards edges; primary-coverts sepia narrowly tipped

white ; greater coverts pale sepia broadly tipped white ; median and lesser coverts sepia edged ash-white. This plumage is acquired by complete moult Aug. to Jan. N.B.—From available material it appears that body-moult takes place Aug. and Sept. while wing-moult is delayed till Jan., Feb. or March. *Summer*.—The body-feathers (not all scapulars nor all feathers of back, rump and upper tail-coverts), apparently sometimes tail, occasionally some innermost secondaries and coverts are moulted in spring. Crown pink-buff streaked black-brown ; nape greyish-white or light buff streaked black-brown ; mantle and scapulars black-brown, feathers edged pink-buff or pink-cinnamon and tipped ash-brown ; remaining upper-parts as winter ; ear-coverts pink-buff streaked dusky ; chin and upper-throat white ; sides of neck, lower-throat and breast white, streaked and spotted dusky-brown ; remaining under-parts, tail and wing as winter but new innermost secondaries edged pink-cinnamon.

Nestling.—(Not examined.)

Juvenile.—Crown streaked sepia or black-brown, feathers edged tawny ; nape ash-brown streaked darker ; mantle and scapulars sepia or black-brown, feathers broadly edged tawny tipped white ; back and rump sepia, feathers edged tawny ; upper tail-coverts as adult but central pair sepia edged tawny ; under-parts as adult but breast suffused light buff and narrowly streaked sepia or dusky-brown ; tail as adult ; wing as adult but innermost secondaries and coverts sepia edged tawny ; median and lesser coverts sepia broadly edged white or light buff, some of innermost median edged tawny.

First winter.—As adult winter but distinguished by tawny edges to juvenile feathers of back and rump and innermost median coverts and light buff edges to some median and lesser coverts. The juvenile body-plumage (not all scapulars, nor all feathers of back and rump), sometimes some innermost secondaries and coverts but usually not rest of wings and not tail-feathers in birds examined are moulted Sept. to Jan. N.B.—Three (Jan.) were moulting primaries, greater coverts, innermost secondaries and coverts and median coverts and were getting winter-feathers on mantle. *First summer*.—Not examined ; but judging by 1st winter birds not distinguishable.

Measurements and structure.—♂ wing 115–126 mm., tail 46.5–52, tarsus 22–24, bill from feathers 23–25.25 (12 measured). ♀ wing 113–126, bill 21–26. Primaries : 1st minute, 2nd longest, 3rd 2–4.5 mm. shorter, 4th 9–12 shorter, 5th 17–21 shorter, 6th 27–30 shorter. Longest inner secondary between 5th and 7th primaries. Bill short and slender. Other structure as in *C. a. alpina*.

Soft parts.—Bill blackish, dull green at base ; legs and feet dusky-green ; iris black-brown.

CHARACTERS.—No subspecies. White upper tail-coverts, small size and short, straight bill distinguish it from other species of this genus.

FIELD-CHARACTERS.—About size of Dunlin with a straight, slender bill. At favourable angles diagnostic white patch crossing above rather dark tail is conspicuous. As in American Stint and Semipalmated Sandpiper a pale shade on wing, but nothing comparable with white wing-stripe of Dunlin or bolder black and white of Sanderling. Frequents bay-flats and marsh pools, flying rather leisurely in close-ranked flocks. Scattering birds loosely associate with other small waders, even with Sanderling on open beaches, and fly more swiftly. Such birds have a peculiar and diagnostic flight-note like squeak of a mouse—"jeet." In general species is rather silent. Sometimes takes advantage of concealing coloration by crouching, as do Pectoral and American Stint. (J. T. Nichols.)

BREEDING-HABITS.—Little on record as to breeding. *Nest.*—Shallow cavity in ground, lined with a few decayed leaves. *Eggs.*—Usually 4, pyriform, rufous-drab in ground-colour with irregular umber markings, almost black in places and ashy-grey shellmarks, chiefly at large end. Average of 23 eggs, 34.1×23.9 . Max.: 36×25 . Min.: 31.4×23.7 and 31.6×22.9 mm. *Breeding-season.*—End June and first half July. *Incubation.*—No details.

FOOD.—Only insects, smaller crustacea, and marine animals recorded.

DISTRIBUTION —*England* —Fifteen. Salop (one), Scilly Isles (two), Cornwall (three), Devon (four), Sussex (two), Middlesex (one). (Saunders, p. 581). Kent (one), June 4, 1906 (*Brit. B.*, I, p. 231). Sussex (one) April 14, 1916 (*op. c.*, XI, p. 68). One believed shot near Belfast prior to 1836.

DISTRIBUTION.—*Abroad.*—Breeds on arctic coast and islands of N. America as far west as Point Barrow in Alaska, and as far east as west Greenland. Migrates through N. and Middle America, and W. Indies, and winters in southern S. America to south Patagonia and Falkland Islands. Casual in Bermudas, once Franz Josef Land.

CALIDRIS MARITIMA

399. *Calidris maritima maritima* (Brünn).—THE PURPLE SAND-PIPER.

TRINGA MARITIMA Brünnich, Orn. Bor., p. 54 (1764—Christiansøe, Norway).

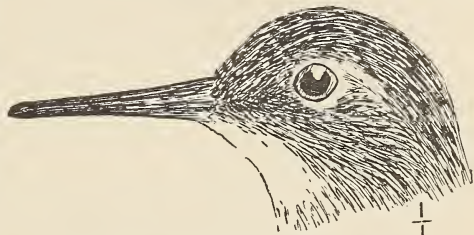
Tringa lincolniensis Latham, Ind. Orn., II, p. 734 (1790—Lincolnshire).

Tringa nigricans Montagu, Trans. Linn. Soc., London, IV, p. 40, pl. II, fig. 2 (1796—Wales).

Tringa striata Linnæus, Yarrell, III, p. 408; Saunders, p. 593.

DESCRIPTION.—*Adult male and female.* *Winter.*—Crown sooty-brown, feathers edged dark ash-grey; nape dusky-brown, feathers faintly edged dark ash-grey; mantle and scapulars black-brown glossed bronze-purple, feathers edged dark ash-grey; lower scapulars brown more or less edged white at tip; back and rump black-brown, feathers narrowly edged ash-white; central upper tail-

coverts same but glossed magenta-purple ; sides of back and rump and lateral upper tail-coverts white, some feathers with median streaks of dusky-brown ; sometimes a small ill-defined whitish patch between lores and eye ; ear-coverts, cheeks and sides of neck sooty-brown ; chin and throat white washed dusky ; breast sooty-brown, most feathers edged white, lower-breast white more or less streaked sooty-brown ; flanks white, centres of feathers mostly sooty-brown ; under tail-coverts white streaked dusky ; remaining under-parts white ; tail-feathers ash-brown edged white, two central pairs black-brown ; primaries black-brown paler on inner webs, inner ones tipped white, 5th or 6th and succeeding with narrow white margins on outer webs ; secondaries black-brown tipped white, inner webs paler and more or less white, inner ones more or less white ; innermost and their coverts as mantle ; bastard-wing sooty-brown ; primary-coverts same tipped white ; greater coverts same but more broadly tipped white ; median and lesser coverts black-brown or sooty-brown edged greyish white. This plumage is acquired by complete moult Aug. to Nov. *Summer*.—The body-feathers (apparently not all scapulars and not back, rump or upper tail-coverts), sometimes some innermost secondaries and coverts are moulted in spring but not rest of wings or tail. Crown black-brown, feathers edged pink-cinnamon or buff ; nape streaked sooty, feathers edged greyish-white or buff ; mantle and scapulars black-brown glossed magenta-purple, feathers edged pink-cinnamon or pink-buff ; remaining upper-parts as adult winter ; cheeks and sides of neck white narrowly streaked black-brown ; chin white spotted dusky ; throat white heavily streaked sooty-brown ; breast sooty-brown, feathers barred and tipped white, lower-breast mostly white, feathers with large oval sooty-brown spots ; flanks and under tail-coverts white with irregular median marks and shadings of sooty-brown ; belly white, somewhat blotched sooty-brown ; remaining under-parts, tail and wing as winter but new innermost secondaries black-brown, tipped buff.



The Purple Sandpiper (*Calidris m. maritima*).

Nestling.—Fore-part of crown warm buff ; black-brown median line from base of upper mandible to crown ; crown and upper-parts velvety-black-brown, down with numerous cream and warm buff tips ; nape light buff, down with sooty-brown bases ; from base of upper mandible above eye to nape a black-brown streak, another short one from base of lower mandible, ear-coverts as crown ; cheeks warm or light buff, down with black-brown tips ; remaining under-parts greyish-white, down sooty-brown towards base. (Only one examined.)

Juvenile.—Crown sepia, feathers faintly tipped cream ; nape as adult ; mantle and scapulars dark sepia, feathers edged creamy-white ; back, rump and upper tail-coverts as adult but central tail-coverts tipped cream ; under-parts, tail and wing as adult but innermost secondaries and coverts, median and some lesser coverts with broad cream-white edges ; sometimes one or two innermost median coverts tipped pink-cinnamon.

First winter.—As adult winter but distinguished by broad white edges to juvenile and median coverts and by worn cream edges to retained juvenile innermost secondaries and coverts and one or two scapulars. The juvenile body-plumage (not all scapulars nor all feathers of back and rump nor all tail-coverts) are moulted Sept. to Dec. but apparently not wings or tail. *First summer*.—Moult as adult, after which like adult but distinguished by worn creamy-white edges to faded brown median coverts and inner secondaries.

Measurements and structure.—♂ wing 122–130 mm., tail 52–63.5, tarsus 20–23, bill from feathers 24–31 (12 measured). ♀ wing 129.5–138, bill 32–36.5. Primaries : 1st minute, 2nd longest, 3rd 3.5–5.5 mm. shorter, 4th 8–12 shorter, 5th 15–20 shorter, 6th 21–27.5 shorter. Longest inner secondary between 5th and 9th primaries. Tail with middle feathers considerably longer, three lateral nearly equal. Bill slender, short and tapering to a point. Other structure as in *C. a. alpina*.

Soft parts.—Bill brown-black, base yellow ; legs and feet greenish-yellow ; iris brown.

CHARACTERS AND ALLIED FORMS.—*C. m. couesi* (W. and N. America, Alaska and Kurile Islands) has upper-parts in summer brighter ; *C. m. ptilocnemis* (Pribilof Islands and Alaska) is similar to *C. m. couesi* but larger ; *C. m. quarta* (Commander Islands) has also been separated. Black rump and upper tail-coverts, 7th to 9th secondaries more or less white and greenish-yellow legs distinguish Purple Sandpiper.

FIELD-CHARACTERS.—Mainly a winter-visitor and mostly confined to rocky coasts. Very easy to approach as it feeds on tangle-covered reefs as tide ebbs, so close to surf that at times it is washed from its foothold, when it swims buoyantly. Rather smaller and much more sombrely coloured than Turnstone, with which it often consorts, it is recognized at once by short ochreous-yellow legs, squat, plump form and its purple-black upper-parts, relieved only by a white patch on the secondaries, conspicuous in flight. Silent as a rule, but sometimes utters a low “ weet-wit ” on rising.

BREEDING-HABITS.—Breeds on tundra, at considerable heights in Færoes and Iceland, but in Spitsbergen frequently on sides of low hills and even among moss-grown shingle near shore. *Nest*.—Neat round cup in ground, generally lined with dead leaves of *Salix*. *Eggs*.—4 normally, occasionally 3 only, pyriform, varying from pale greenish to yellowish and brown-buff in ground, streaked and spotted with sienna to sepia-brown and occasionally black streaks or

spots, and usual ashy shellmarks. Average of 100 eggs, 37.3×26.5 . Max. : 40×28 . Min. : 35.1×26.6 and 37.3×24.8 mm. *Breeding-season*.—Last fortnight May onward in Færoes ; from mid-June onward in Spitsbergen. *Incubation*.—Chiefly by male, but female takes some share. Period not less than 20 days. Single brooded.

FOOD.—Varied ; including insects : coleoptera (*Otiorynchus*), diptera (larvæ of *Chironomus*), also spiders, *Thysanura* (or *Collembola*), annelida and crustacea (*Amphipoda*, *Isopoda*, *Orchestia*, *Idotea*, *Gammarus* and *Podocerus*) as well as mollusca (*Mytilus*, *Littorina*, *Purpura*, etc.). Vegetable matter is also eaten, including algæ, grasses, moss, buds and leaves of phanerogams and remains of cryptogams. Seeds of *Cochlearia* have been identified and small fish (*Gobius*) nearly 1 in. long, as well as ova of lumpsucker.

DISTRIBUTION.—*British Isles*.—Winter-visitor and passage-migrant (early Aug. to mid-Oct. and mid-March to early June). Widely spread all coasts, especially rocky ones. Thought to have bred Shetlands, but no proof. Exceptional inland.

DISTRIBUTION.—*Abroad*.—Inhabits arctic regions of Northern Hemisphere, and breeds in Siberia, north Russia, north Scandinavia, Novaya Zemlia, Franz Josef Land, Spitsbergen, Iceland and Færoes, Greenland and arctic America (Melville Island, Ellesmere Land), being migratory in northernmost regions, resident as far north as Iceland and south Greenland, but wintering as far south as North Sea and Baltic, and even in small numbers to Mediterranean and in America to Great Lakes, Georgia, Florida and Bermudas. Replaced by other subspecies in Alaska, the Pribilof, Aleutian and Shumagin Islands, also on Commander Islands.

Genus TRYNGITES Cab.

TRYNGITES Cabanis, Journ. f. Orn., 1856, p. 418 (Monotype *T. rufescens* Vieill. nec Bechstein = *subruficollis*).

Very near *Calidris*. Easily recognized by the small black spots on the inner webs of the primaries, which are not found in any other British Waders. Bill much longer than tarsus, straight, hard, not flexible. Sides of tail not emarginated, middle rectrices much longer than rest. ♂ larger than ♀. Summer and winter plumages differ very little. Habits differ from species of *Calidris*, inhabits prairies and dry plains inland. 1 species.

TRYNGITES SUBRUFICOLLIS

400. *Tryngites subruficollis* (Vieill.)—THE BUFF-BREASTED SANDPIPER.

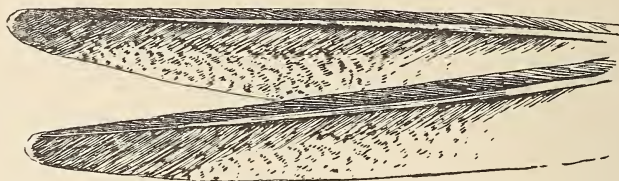
TRINGA SUBRUFICOLLIS Vieillot, Nouv. Dict. d'Hist. Nat., nouv. éd., xxxiv, p. 465 (1819—Paraguay. Ex Azara).

Tryngites rufescens (Vieillot), Yarrell, III, p. 435 ; Saunders, p. 601.

Erolia subruficollis (Vieill.), Hand-List (1912), p. 177.

DESCRIPTION.—*Adult male and female*. *Winter*.—Crown sepia, feathers edged sandy-buff ; nape sandy-buff spotted sepia ; mantle,

scapulars, back, rump and upper tail-coverts blackish olive-brown broadly edged sandy or pink-buff; ear-coverts, cheeks and sides of neck pink-buff; chin, throat and remaining under-parts pink-buff, feathers spotted and edged white (sides of breast spotted sepia), belly, vent and under tail-coverts usually light buff; axillaries white; under wing-coverts white, under primary-coverts banded subterminally and irregularly marked with black; tail-feathers ash-brown, tipped buff, and bordered with sepia and usually irregularly mottled same, central ones olive-brown, tipped buff; primaries olive-brown, becoming blackish toward tips which are



The Buff-breasted Sandpiper (*Tryngites subruficollis*). Two outer primaries.

cream-coloured, inner feathers with outer webs slightly speckled brown, inner webs white with irregular wavy bars and freckles of dark brown; secondaries as inner primaries but inner webs more boldly marked; innermost secondaries and coverts blackish olive-brown, edged sandy or pink-buff; primary-coverts olive-brown, tipped black-brown and narrowly edged cream; greater coverts olive-brown freckled on inner webs and with subterminal bars of black-brown and tipped sandy-buff; median coverts pink-buff shading to sandy-brown towards base with irregular V- or Y-shaped or semi-circular black-brown markings; lesser coverts black-brown edged sandy-buff. This plumage is acquired by complete moult in autumn (very few specimens moulting remiges were examined). N.B.—One Buenos Ayres 20/2/76 with 2nd primary in quill and moulting body-feathers, tail new. *Summer*.—The body-feathers (not all scapulars), sometimes tail-feathers, some innermost secondaries and coverts and apparently some median and lesser coverts but not rest of wings are moulted in spring. Coloration as winter. N.B.—One June had 2nd primary in quill and was in body-moult.

Nestling.—(Not examined.)

Juvenile. Male and female.—Crown sepia, feathers narrowly edged light buff; nape sandy-buff spotted sepia; mantle black-brown, feathers edged cream-white; scapulars black-brown, longer ones olive-brown edged cream or buff; back, rump and upper tail-coverts as adult; sides of neck sandy-buff minutely spotted dusky; remaining under-parts as adult; tail as adult but usually without brown speckling; wing as adult but inner webs of primaries and secondaries minutely and closely speckled and irregularly barred olive-brown, (in adult barrings and specklings are larger and further apart), innermost secondaries olive-brown with lighter edges and

tipped cream ; median coverts sandy-brown with cream-buff edges and a subterminal bar or central streak of sepia ; inner median and lesser coverts sepia, edged pink-buff.

First winter.—Not examined. One Oct. bird had acquired some adult winter-plumage on mantle. *First summer*.—(Not examined.)

Measurements and structure.—♂ wing 129–138 mm., tail 54–60, tarsus 29–32.5, bill from feathers 20.5–22.5 (11 measured). ♀ wing 124.5–128.5, bill 18–21. Primaries : 1st minute, 2nd longest. 3rd equal or 2–3.5 mm. shorter, 4th 8.5–10.5 shorter, 5th 16.5–19 shorter, 6th 24.5–28 shorter. Longest inner secondary between 6th and 7th primaries. Tail square, central pair longest. Bill short, slender and tapering.

Soft parts.—Bill black ; legs and feet dull orange ; iris dark brown

CHARACTERS.—No subspecies. Distinguished by pink-buff underparts and by inner webs of primaries and secondaries being freckled with black.

BREEDING-HABITS.—Haunts dry banks and ridges on tundra. *Nest*.—Only shallow depression in black peaty soil, lined with a little moss or leaves. *Eggs*.—4 usually, 5 once recorded, pyriform, clay-coloured to greyish-buff in ground, boldly and quite irregularly marked with rich umber-brown, occasionally shading into black, and in most cases chiefly at large end, with ashy-grey shellmarks. 4 eggs measure, 38.1×26.1 , 37.6×27.9 , 36.8×25.9 , and 35.5×26.4 mm. (Coues). *Breeding-season*.—June 26–July 9 on Barren Grounds (MacFarlane). *Incubation*.—By female, but no details of period. Single brooded.

FOOD.—Chiefly insects ; coleoptera and diptera recorded.

DISTRIBUTION.—*British Isles*.—About eighteen, mostly Sept., but one May and one July. Lincs. (one), Norfolk (five), Cambs. (one), Sussex (one), Cornwall and Scilly (four), Lundy Island (one), Lancs. (one), Cumberland (one), Dublin (one), Down (two), [Caithness (one) supposed], (Saunders, p. 601 and *Brit. B.*, II, pp. 241, 269).

DISTRIBUTION.—*Abroad*.—Breeds along arctic coasts of N. America and easternmost arctic Asia. Winters in Argentina and Uruguay, passing, on migration, through N. America, casual west Europe (Heligoland, Switzerland), also Bermudas, Sea of Ochotsk, and Japan.

Genus EREUNETES Ill.

EREUNETES Illiger, Prodr. Syst. Mamm. et Av., p. 262 (1811—Monotype *E. petrificatus* Ill. = *pusillus* (L.)).

Small Sandpipers of about size of Little Stint, might well be united with *Calidris*, but front toes united by web to almost their middle. Bill as long as head or very little longer, tail doubly emarginate, but not deeply, central pair much longer than lateral. 2 forms, generally looked upon as subspecies of one species. Arctic America, migrating S. America.

EREUNETES PUSILLUS

401. *Ereunetes pusillus pusillus* (L.)—THE SEMI-PALMATED SANDPIPER.

TRINGA PUSILLA Linnæus, Syst. Nat., ed. XII, i, p. 252 (1766—San Domingo).

Ereunetes pusillus, N. F. Ticehurst, Brit. B., I, p. 223.

DESCRIPTION.—*Adult male and female.* *Winter.*—Crown, nape, mantle and scapulars ash-brown, feathers faintly edged white; crown and nape streaked sepia, mantle and scapulars with sepia shaft-streaks, some scapulars with sepia centres; back, rump and upper tail-coverts sepia, feathers edged ash-brown; incomplete eye-stripe white; lores, ear-coverts and sides of neck white narrowly streaked dusky; upper-breast white narrowly streaked dusky, most pronounced at sides; remaining under-parts white; tail-feathers pale ash-brown faintly edged white, inner webs of central pair sepia; primaries sepia paler on inner webs, 6th and succeeding narrowly margined white on outer webs; secondaries sepia tipped white and more or less white on inner webs; innermost secondaries and coverts as scapulars; primary-coverts black-brown faintly tipped white; rest of wing-coverts ash-brown, greater coverts broadly, rest faintly tipped white. This plumage is acquired by complete moult July to Nov. N.B.—One or two Feb. birds had 2nd primary in quill but wing-moult is usually completed earlier. *Summer.*—The body-feathers (not all scapulars nor all feathers of back and rump nor all upper tail-coverts), apparently sometimes tail, some innermost secondaries and coverts but not rest of wings are moulted Feb. to May. Crown black-brown, feathers edged pink-buff; nape pinkish or light buff streaked sepia; mantle and scapulars black-brown, feathers with broad edges of ash-brown, edges mostly suffused pink-buff or pink-cinnamon especially on scapulars; back, rump and upper tail-coverts as winter; ear-coverts buff streaked dusky; cheeks and sides of neck white narrowly streaked sepia; chin white; lower-throat and upper-breast white spotted and streaked sepia; remaining under-parts, tail and wings as winter. N.B.—Towards end of summer upper-breast has somewhat barred appearance due to abrasion of white edges and consequent disclosing of pale brown bases of feathers. 4 or 5 June specimens examined were in winter plumage having apparently moulted into winter instead of summer plumage.

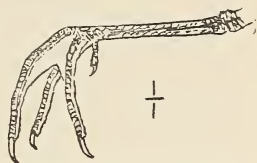
Nesting.—(Not examined.)

Juvenile.—Crown sepia, feathers edged sandy-buff; nape streaked sepia or dusky-brown, feathers edged cream or ashy-white; mantle and scapulars black-brown, feathers edged ochraceous-buff and creamy-white; back, rump and upper tail-coverts sepia, feathers edged buff; lores and ear-coverts dusky-brown; sides of neck greyish-white streaked dusky-brown; chin and throat as adult; upper-breast washed buff, streaked at sides dusky-brown (sometimes centre white); remaining under-parts white; tail-

feathers as adult but edged buff; wing as adult but innermost secondaries and coverts sepia edged ochraceous-buff or creamy-white; median coverts pale sepia or ash-brown edged sandy-buff or cream; lesser coverts sepia edged sandy-buff.

First winter.—As adult winter but distinguished by creamy and sandy-buff edges to juvenile wing-coverts, least abraded on innermost median. The juvenile body-plumage (apparently not all scapulars nor all feathers of back and rump), sometimes central pair of tail-feathers, innermost secondaries and coverts, some median and lesser coverts are moulted Sept. to Nov. but not rest of wings and apparently not rest of tail-feathers. *First summer*.—Moult and coloration as in adult and only distinguished by cream edges to innermost median and lesser coverts (one examined).

Measurements and structure.—♂ wing 91–99 mm., tail 37–44, tarsus 19.5–21, bill from feathers 16–22 (12 measured). ♀ wing 95–101, bill 18–23. Primaries: 1st minute, 2nd longest, 3rd equal or slightly shorter, 4th 3–7 mm. shorter, 5th 11–14 shorter, 6th 17–32 shorter. Longest inner secondary between 4th and 7th primaries. Tail doubly emarginated, central pair longest. Bill short, stout, straight, considerably expanded at tip which in dried skin appears pitted. Tarsus scutellated. Four toes, 3 front ones connected by well-developed web extending to about first joint.



The Semi-palmated Sandpiper
(*Ereunetes p. pusillus*).

Soft parts.—Bill black; legs and feet slate; iris brown.

CHARACTERS AND ALLIED FORMS.—*E. p. mauri* (Alaska to Yukon) has bill and tarsus longer, upper-parts in summer brighter. Webbing of toes, short stout bill slightly expanded at tip distinguish this from allied species.

FIELD-CHARACTERS.—Usually confused with *Calidris minutilla*. Tone of plumage greyish with a good deal of white, breast little marked. Bill straight, stout at base. *Legs and feet very dark olive*, appearing blackish. Flight-note a quick monosyllabic “chrruk,” reedier and less emphatic than Dunlin’s. Another characteristic note is a short snappy “chip.” A rather loud whinny is clearer and more frequent than a similar note of *C. minutilla*. (J. T. Nichols.)

BREEDING-HABITS.—Very little definite information but apparently breeds in grassy marshes near sea. *Nest*.—Hollow in ground, lined dry bents. *Eggs*.—3–4, probably normally 4, pyriform, somewhat resemble those of *Limicola falcinellus*, being thickly spotted all over with reddish-brown markings, which almost obscure ground-colour. Average of 17 eggs, 30×21.4 . Max.: 32×22 and 30.4×22.6 . Min.: 27.6×19.6 mm. *Breeding-season*.—Fresh eggs in early July in Baffin Land. *Incubation*.—No details available.

FOOD.—Little recorded, but insects and leeches definitely specified

DISTRIBUTION.—*England*.—One. Romney Marsh (Kent), Sept. 17, 1907 (*ut supra*).

DISTRIBUTION.—*Abroad*.—Breeds on arctic shores of N. America south to mouth of Yukon river and to south Ungava. Winters from Texas and Carolina through West Indies and Central America to Patagonia, migrating through United States (mainly east of Rocky Mountains), casual in north-east Siberia. Replaced by a very closely-allied form on Alaska coast from Kotzebue Sound north to mouth of Yukon, migrating in winter south to Florida and Carolina, Trinidad and S. America. Casual Pribilof Is.

Genus LIMICOLA Koch.

LIMICOLA* Koch, Syst. baier. Zool., p. 316 (1816—Monotype *L. pygmaea* = *falcinellus*).

Differs from species of genus *Calidris* by shape of bill, which is soft and flexible, tip hard; in front of sharply defined frontal feathering bill is slightly swollen or wrinkled, nostrils short and near base, bill in front of nostrils strongly flattened and a little recurved, tip decurved. Tail square and can hardly be called doubly emarginate, but middle feathers are pointed and longer. Hind toe well developed. 1 species in two subspecies.

LIMICOLA FALCINELLUS

402. *Limicola falcinellus falcinellus* (Pont.)—THE BROAD-BILLED SANDPIPER.

SCOLOPAX FALCINELLUS Pontoppidan, Danske Atlas, i, p. 623 (1763—Denmark); Brünnich, Orn. Bor., p. 49 (1764—Iceland).†

Tringa platyrhyncha (evidently wrong transliteration for *platyrhyncha*) Temminck, Man. d'Orn., p. 398 (1815—Swamps of N. Europe and N. America, on passage in Germany. Typical locality: north Europe).

Limicola platyrhyncha (Temminck), Yarrell, III, p. 362; Saunders, p. 577.

Limicola platyrhyncha platyrhyncha (Temm.), Hand-List (1912), p. 178.

DESCRIPTION.—*Adult male and female*. *Winter*.—Crown, nape, mantle and scapulars ash-brown, feathers with brown shafts and narrowly edged white; back, rump and upper tail-coverts black-brown, feathers tipped ash-brown; sides of rump and lateral upper tail-coverts white; eye-stripe white; lores dusky-brown; ear-coverts, cheeks and sides of neck white streaked dusky; underparts white, lower-throat and upper-breast narrowly streaked dusky-brown most pronounced at sides; tail-feathers pale ash-brown narrowly edged white, central pair with inner webs black-brown; primaries and secondaries sepia paler on inner webs, secondaries

* *Limicola* has been rejected because in the same year, but apparently 3 months earlier, Vieillot published a *Limicola*, but both names are distinguishable and have a slightly different meaning. We therefore do not accept this change.—E.H.

† The name *falcinellus* antedates Temminck's *platyrhyncha* (sic!) by over 50 years.—E.H.

tipped white ; innermost and their coverts ash-brown shaded sepia centrally ; primary-coverts black-brown tipped white ; greater and median coverts ash-brown edged white, broadly on greater coverts ; lesser coverts black-brown, narrowly edged white. This plumage is acquired by complete moult Aug. to Jan. *Summer*.—The body-feathers (not all scapulars nor all feathers of back and rump), often central pair of tail-feathers, occasionally all tail-feathers, innermost secondaries and coverts, a few median and lesser coverts but not rest of wings, are moulted Feb. to May. Crown brown-black, feathers edged cream and buff ; nape buff streaked sepia ; mantle and scapulars brown-black, feathers edged cream, warm buff and tawny ; back, rump and upper tail-coverts brown-black, feathers tipped tawny ; lateral upper tail-coverts white marked dusky ; eye-stripe white spotted dusky ; ear-coverts dusky ; cheeks, sides of neck, chin, throat and upper-breast buff-white, heavily streaked and spotted sepia (chin sometimes white) ; flanks white (sometimes washed buff), shaded and barred sepia ; lateral under tail-coverts white irregularly marked sepia ; remaining under-parts as winter ; tail-feathers as winter but new central pair black-brown edged warm buff or tawny, 4th and 5th pairs from outside (when new) sepia tipped white and marked buff towards centre ; wing as winter but innermost secondaries and coverts, new median and lesser coverts black-brown edged tawny or warm buff.

Nesting.—Down on fore-head white ; black-brown median line from base of upper mandible to crown ; upper-parts variegated dark tawny and black and minutely dotted white ; eye-stripe white ; black-brown line from lores to eye ; ear-coverts and moustachial streak tawny ; remaining under-parts white, down greyish at base, upper-breast slightly suffused tawny.

Juvenile.—Upper-parts and ear-coverts as adult summer ; cheeks and sides of neck light buff streaked dusky ; under-parts as adult winter but lower-throat, upper-breast and flanks suffused buff ; tail and wing as adult summer but median coverts sepia edged light buff or white ; lesser coverts black-brown faintly edged tawny.

First winter.—As adult winter but distinguished by buff edges to retained juvenile median coverts. The juvenile body-plumage (not all scapulars and apparently not feathers of back and rump), sometimes tail-feathers, innermost secondaries and coverts, some median and lesser coverts but not rest of wings are moulted Sept. to Jan. *First summer*.—(Not examined.)

Measurements and structure.—♂ wing 102.5–110 mm., tail 35–40, tarsus 21–22, bill from feathers 28–33.5 (12 measured). ♀ wing



The Broad-billed Sandpiper (*Limicola f. fulcinellus*)
Bill from above.

103–109, bill 27.25–35.5. Primaries : 1st minute, 2nd longest, 3rd equal or 2–4 mm. shorter, 4th 6.5–9.5 shorter, 5th 13–20 shorter, 6th 21–27 shorter. Longest inner secondary between 4th and 7th primaries. Tail square, central pair longest. Bill long, broad, widening towards middle and tapering to tip which is decurved. Four toes, outer and middle ones very slightly webbed at base.

Soft parts.—Bill blackish mud-green ; legs yellowish-grey with dark leaden-grey tarsal joints and toes (Dresser) ; iris dark brown.

CHARACTERS AND ALLIED FORMS.—*L. f. sibirica* (E. Siberia) in summer and juvenile has upper-parts brighter and is generally larger. In winter much resembles Dunlin but long broad bill and little or no white on secondaries distinguish it.

BREEDING-HABITS.—Breeds in swamps and morasses, in Scandinavia 3000 ft. above sea-level on Dovrefjeld. *Nest*.—Generally in tussock of grass just above water-level, consisting of hollow lined with dead leaves of *Salix* or in some cases dry bents only. *Eggs*.—4, pyriform, thickly covered with fine reddish or sometimes chocolate spots, so as almost to hide whitish ground, and sometimes darker red-brown spots or blotches superimposed. Average of 100 eggs, 32×22.8 . Max. : 35.2×23.2 and 31.8×24.8 . Min. : 28.7×22.7 and 32.5×21 mm. *Breeding-season*.—Fresh eggs from about June 7 to 24 on the Dovre and about mid-June average date for Lapland. *Incubation*.—Probably by both sexes, as both have incubation spots. Period unknown. Single brooded.

FOOD.—Collett records *Harpalinus*, *Bembidium* and various larvæ from stomachs ; Jäckel records worms, beetles (*Cyclonotum*), mollusca (*Planorbis*) as well as seeds of *Potamogeton*, *Polygonum*, and *Pilularia*.

DISTRIBUTION.—*British Islands*.—Sixteen, mostly Aug. to Oct., but two April and two May. Yorks. (one), Norfolk (five), Kent (two), Sussex (six), Belfast Lough (one) (Saunders, p. 577 and *Brit. B.*, II, p. 267, III, p. 257), Fife (one, Aug., 1912) (*Scot. Nat.*, 1912, p. 212).

DISTRIBUTION.—*Abroad*.—Breeds in Scandinavian mountains, and probably in north Russia and west Siberia. On migration visiting coasts and inland waters of Denmark, Holland, Germany, France, Switzerland, and Italy, Black and Caspian, Mediterranean and Red Seas, Pamirs and India. Replaced farther east by another form, which is found on shores of sea of Ochotsk, and probably on Lake Baikal, and in winter in Japan, China, and even Malayan and Moluccan Islands. It must breed in east Siberia.

Genus MACRORHAMPHUS Forst.

MACRORHAMPHUS Forster, Syn. Cat. Brit. B., p. 22 (1817—Monotype *M. griseus* ; name from Leach, Cat. Mamm. and B. Brit. Mus., p. 31, 1816, which was only a label-list and not published until reprint 1882).

Middle-sized waders with long Snipe-like bill, culmen narrow, soft and flexible behind tip, which is broadened. Ear much forward

as in Snipes, almost exactly under eye. Wings long and pointed. Tail almost square, but central rectrices a little longer. Tarsus much shorter than bill, on both sides scutellated. 4 toes, well developed web between middle and outer, shorter between middle and inner. 2 species, one with two subspecies.

MACRORHAMPHUS GRISEUS

403. *Macrorhamphus griseus griseus* (Gm.)—THE RED-BREASTED SANDPIPER.

SCOLOPAX GRISEA Gmelin, Syst. Nat., I, ii, p. 658 (1789—Coast of New York).

Macrorhamphus griseus (Gmelin), Yarrell, III, p. 357; Saunders, p. 621.

DESCRIPTION.—*Adult male and female.* *Winter.*—Crown, nape, mantle and scapulars ash-brown, feathers with brown shafts and edged greyish-white; back in some more or less white, in others with large spots or markings of black-brown as rump; upper tail-coverts white barred black-brown; eye-stripe, ear-coverts, sides of neck, chin, throat and upper-breast white streaked and clouded ash-brown; flanks white barred ash-brown; belly and vent white; under tail-coverts, axillaries and under wing-coverts white irregularly barred and marked ash-brown; tail-feathers broadly barred white and sepia (barring sometimes obsolete); primaries sepia, shaft of 2nd white, of remainder brown, inner feathers irregularly



The Red-breasted Sandpiper (*Macrorhamphus g. griseus*). Bill from above.

marked white on both webs and tipped same; secondaries ash-brown edged and irregularly marked white; innermost and their coverts as mantle; primary-coverts black-brown narrowly tipped white; greater coverts sepia broadly edged and sometimes marked white; median and lesser coverts sepia edged white. This plumage is acquired by complete moult Aug. to Feb. *Summer.*—The body-feathers (not all scapulars and only a few scattered feathers on back and rump), central pair of tail-feathers, innermost secondaries and coverts, median and lesser coverts are moulted Feb. to June (one still getting a few new feathers on mantle in June) but not rest of wings or tail-feathers, some winter body-feathers are sometimes retained. Crown, nape, mantle and scapulars black-brown edged pink-cinnamon, mantle and scapulars barred same; new feathers of back, rump and upper tail-coverts suffused same; eye-stripe light buff; ear-coverts, cheeks, sides of neck and sides of breast

light pink-cinnamon streaked sepia ; lores sepia ; chin, throat, breast and under tail-coverts light pink-cinnamon more or less spotted sepia, feathers tipped white ; flanks same but strongly barred instead of spotted ; belly and vent whitish, sometimes suffused pale pink-cinnamon ; rest of body-plumage as winter ; tail as winter but central pair sometimes suffused light pink-cinnamon ; wing as winter but new innermost secondaries and coverts, median and lesser coverts as scapulars.

Nesting.—(Not examined.)

Juvenile.—Crown black-brown or sepia, feathers edged cinnamon or cinnamon-buff ; nape dusky-ash slightly streaked sepia ; mantle and scapulars black-brown, feathers broadly edged and barred cinnamon-buff ; lower scapulars ash-brown edged white or buff ; back and rump as adult winter ; upper tail-coverts faintly tipped buff ; eye-stripe buff spotted dusky ; lores dusky ; ear-coverts, cheeks and sides of neck ash-brown streaked sepia ; chin buff-white, sometimes minutely spotted dusky ; throat and upper-breast more or less suffused buff, narrowly streaked and spotted sepia ; flanks white barred and spotted ash-brown, tipped (and sometimes suffused) buff ; belly, vent and under tail-coverts more or less suffused light buff ; axillaries and under wing-coverts as adult ; tail as adult but most feathers tipped buff ; wing as adult but innermost secondaries and coverts sepia, tipped cinnamon-buff, with or without irregular markings of same ; median coverts edged with dull greyish-buff or cinnamon-buff, not with white as adult winter ; lesser coverts as adult winter.

First winter.—As adult winter but distinguished by some juvenile scapulars and innermost secondaries, also by faded cinnamon-buff edges to juvenile coverts and to central pair of tail-feathers, when not moulted. The juvenile body-plumage (apparently not back or rump nor all scapulars), sometimes tail, innermost secondaries and coverts, some median and lesser coverts are moulted Sept. to Feb. but not rest of wings. *First summer*.—(Not examined.)

Measurements and structure.—♂ wing 138.5–151.5 mm., tail 48.5–57, tarsus 32–37.5, bill from feathers 52–64 (12 measured). ♀ wing 146–152, bill 64–75 (8 measured). Primaries : 1st minute, 2nd longest, 3rd equal or 6–7 mm. shorter, 4th 6–12 shorter, 5th 14–20.5 shorter, 6th 22–29 shorter. Longest inner secondary between 4th and 7th primaries. Tail square, central feathers longest. Bill long, slender and slightly enlarged at tip which in dried skin is covered with a net-work of small depressions. Four toes, outer and middle ones webbed up to about first joint.

Soft parts.—Bill black-brown, greenish at base ; legs and feet greenish-black ; iris dark brown.

CHARACTERS AND ALLIED FORMS.—*M. g. scolopaceus* (Alaska) is larger and in summer plumage has abdomen uniform pink-cinnamon. Red-breasted Snipe is distinguished by its long straight bill,

white back and rump with large oval spots of sepia and barred tail.

FIELD-CHARACTERS.—Upper-parts darker and browner than other coastal birds with which it associates, bill conspicuously longer, approaching in both these characters shorter-winged upland Snipe (*Gallinago*). In flight a pure white stripe (not seen when bird has alighted) in centre of dark back. Young birds have vague greyish posterior border to wing, conspicuous at some distance. Stands low, rather short (greenish) legs contrasting with long bill. Frequents pools in marsh and coastal mud-flats. Unsuspicious and gregarious. Flight-note a whistle like that of Yellowshank, but distinguishable, “dow,” “do-witch” or “do-wit-cher,” last syllable often doubled or trebled. (J. T. Nichols.)

BREEDING-HABITS.—Haunts marshes and borders of lakes. *Nest*.—Shallow depression in moss or among bents, with no lining beyond an occasional leaf or two. *Eggs*.—4, greenish-olive to drab in ground, spotted and streaked with sepia-brown and a few underlying shellmarks. Average of 12 eggs taken by E. W. Nelson, 41.4×30.9 . Max.: 47.5×31.5 and 46.5×31.7 . Min.: 42.9×30.5 mm. *Incubation*.—Female recorded brooding. No details of period. Single brooded.

FOOD.—Insects, especially coleoptera; also worms, leeches and occasionally small seeds.

DISTRIBUTION.—*British Isles*.—Over twenty from Aug. to Oct., one May, in various years. Yorks. (one), Lincs. (one), Norfolk (three), Middlesex (two), Kent (three), Sussex (one), Hants. (two), Devon (one or more), Scilly (one), Lancs. (two), Cumberland (one), Fife (one), Lanark (one), Argyll (one), Queen's co. (one), Tipperary (one). (Saunders, p. 621; *Brit. B.*, I, p. 231; II, p. 270; VI, p. 95; *Hist. Birds Kent*, p. 481.)

DISTRIBUTION.—*Abroad*.—Eastern N. America, exact breeding range unknown. Winters from Florida and West Indies south to north Brazil; passes on migration along Atlantic coast of N. America and occasionally through Illinois, Indiana, and Ontario; accidental in Greenland, Bermudas, Denmark and France. Replaced by a closely-allied race in western N. America.

Genus TEREKIA Bp.

TEREKIA Bonaparte, Comp. List B. Eur. and N. Amer., p. 52 (1838—Monotype “*Tringa javanica*,” corr. *Totanus javanicus* Horsf. = *Scolopax cinerea* Guld.).

Characterised by long recurved bill, which is much wider at base than at tip, at least 15 mm. longer than tarsus. Legs and toes short, outer and inner toe connected with middle one by short web at base. Hind toe well developed. Nearest allies *Tringa*. 1 species only.

TEREKIA CINEREA

404. *Terekia cinerea* (Güld.)—THE TEREK SANDPIPER.

SCOLOPAX CINEREA Güldenstädt, Nov. Comm. Acad. Petrop., XIX, p. 473, pl. 19 (1774 or 5—Shores of Caspian Sea).

Terekia cinerea Güld., T. Parkin, Brit. B., VI, p. 74.

DESCRIPTION.—*Adult male and female.* *Winter.*—Fore-head white, feathers more or less narrowly streaked ash-brown ; upper-parts ash-brown, feathers with faint white edges and except those of nape with sepia shafts, scapulars with black-brown shaft-streaks ; sides of back and rump white ; lateral tail-coverts more or less white mottled and barred ash-brown ; broad white eye-stripe streaked ash-brown ; lores, cheeks, sides of neck and lower-throat white narrowly streaked ash-brown ; breast white faintly streaked or spotted sepia ; sides of breast as upper-parts ; remaining under-parts white ; two central pairs of tail-feathers ash-brown, outer ones usually paler, varying individually, sometimes with inner webs more or less white, sometimes bordered subterminally darker



The Terek Sandpiper (*Terekia cinerea*).

ash-brown ; primaries and coverts black-brown, inner webs paler and shading to white towards base ; secondaries sepia broadly tipped and bordered white and more or less white on inner webs, innermost and their coverts as mantle ; greater coverts sepia tipped white ; median and inner lesser coverts as mantle ; other lesser coverts sepia faintly edged white. This plumage is acquired by complete moult Aug. to Jan. *Summer.*—The body-feathers (not all scapulars), sometimes tail, some innermost secondaries and coverts, usually some median and lesser coverts but not rest of wings are moulted Feb. to May. Coloration as winter but feathers of crown, nape, mantle and scapulars with broader sepia shaft-streaks, some feathers of mantle and scapulars with broad black-brown central markings ; upper tail-coverts usually barred and notched sepia ; lores, cheeks, sides of neck and throat and sides of breast more heavily streaked sepia ; rest of under-parts and tail as winter ; wing as winter but new innermost secondaries shaded darker centrally. N.B.—One April and one May were moulting primaries ; one or two spring specimens were moulting into winter plumage. In late summer upper-parts appear darker owing to abrasion of ash-brown edges.

Nestling.—Fore-head light buff or white ; from base of upper mandible to back of crown a black-brown median line ; rest of

crown and nape light buff, base and long tips of down sooty-black ; from nape to uropygial tuft a black-brown median band ; remaining upper-parts warm and light buff, down with sooty-black bases and long sooty-black tips ; on either side of rump a small black-brown patch not always defined ; a black-brown line from upper mandible through eye to hinder-crown ; ear-coverts, cheeks, sides of neck, chin and throat light buff or white, down with sooty-brown bases ; remaining under-parts white. Bill very slightly upturned.

Juvenile.—Like adult summer but feathers of upper-parts edged light buff, those of mantle with narrower shaft-streaks, black-brown streaks of scapulars sometimes widening out into a club-shaped process or transverse bar at tip ; streaks on cheeks, sides of neck and breast lighter sepia and narrower ; lower-throat and breast slightly suffused light buff ; tail-feathers as adult but edged light buff and usually with subterminal barring or mottling of sepia ; wing as adult but innermost secondaries as scapulars though with central streaks narrower ; wing-coverts tipped buff.

First winter.—As adult winter and only to be distinguished when buff edges to juvenile wing-coverts are not abraded. The juvenile body-feathers, usually all tail-feathers, some innermost secondaries and coverts, some median and lesser coverts are moulted Sept. to Jan. but not rest of wings. *First summer*.—Not to be distinguished from adult summer.

Soft parts.—Bill black, base dirty pale orange ; legs and feet orange ; iris black-brown.

Measurements and structure.—♂ wing 126–141 mm., tail 47–56, tarsus 25–28, bill from feathers 43–49 (12 measured). ♀ wing 127–140, bill 44–52. Primaries : 1st minute, 2nd longest, 3rd equal or 2–4 mm. shorter, 4th 7–10 shorter, 5th 14–20 shorter, 6th 23–28 shorter. Longest inner secondary between 3rd and 5th primaries. Tail almost square, central feathers longest. Bill long and upturned, much wider at base than at tip ; upper mandible with a groove extending to more than half length of culmen, culmen decurved at tip, inter-ramal space unfeathered. Tarsus short and scutellated in front and behind. Four toes, middle and outer ones webbed at base almost up to 2nd joint and middle and inner ones to about 1st joint.

CHARACTERS.—No subspecies. Ash-brown rump and upper tail-coverts, white axillaries and long upturned bill distinguish this species from its allies.

BREEDING-HABITS.—Haunts banks of great rivers of northern Russia and islands and deltas near their estuaries. *Nest*.—Shallow depression in ground, sheltered by tree-root or bush and lined with bits of flood-wrack, rushes, sedge, etc. *Eggs*.—Usually 4, pyriform, much like those of *Tringa stagnatilis*, with pale yellowish-brown ground ranging to yellowish-grey, marked with bold, irregular patches of sepia-brown, and grey shellmarks. Average of 61 eggs, 38.5×26.5. Max. : 42.6×26.3 and 39.7×28. Min. : 33.4×26.2

and 36.7×24.4 mm. *Breeding-season*.—From end of May to mid-June in north Russia. *Incubation*.—Probably by both sexes as both possess incubation patches, but all birds shot from nest by Popham were males. Period unknown. Probably single brooded.

FOOD.—Apparently almost entirely insects, especially coleoptera.

DISTRIBUTION.—*England*.—Seven. Male and female Brookland (Kent) May 23, 1912, male, 24, and female, 25, same place (*ut supra*). Male May 26, male and female May 28, 1915, Rye (Sussex) (T. Parkin, *Brit. B.*, ix, p. 69).

DISTRIBUTION.—*Abroad*.—Breeds in north-east Europe and northern Siberia from Gulf of Bothnia to Kolyma basin, southwards to about 54° N. lat. in central Russia and west Siberia. Passes on migration through Asia and east Europe, wintering in Eastern Archipelago and Australia, also along shores of southern Asia, in north-east Africa and small numbers S. Africa. Rare in middle and west Europe: Germany, Switzerland, Italy, France.

Genus TRINGA L.

TRINGA Linnæus, *Syst. Nat.*, ed. x, i, p. 148 (1758)—Type by tautonymy *tringa*, i.e. *T. ochropus*).

Bill long and slender, straight or slightly recurved, both mandibles with longitudinal grooves. Bill hard, tip slightly de-curved. Tarsus generally long, in *incana*, however, shorter and stronger; scutellated behind, but in one of the subspecies of *incana* more or less reticulated. Hind toe always present. Web between outer and middle toe distinct, between inner and middle only indicated, but more conspicuous in the larger species. Wings long and pointed, 1st developed primary longest. Sharpe and other authors have split up the genus as here conceived into a number of genera, mostly with one species each, but this makes study more difficult. (Of these genera there is most excuse for *Heteroscelus* for *incana* with short and strong legs, and *Actitis* for *hypoleucos* and *macularia* with more pointed tail, but these characters are not sufficient for generic separation, being approached or indicated in other species.)

Key to species of genus TRINGA.

- | | | | | |
|---|---|---|---|--------------------------------|
| 1 | { | Wing over 150 mm. | 2 | |
| | { | Wing under 150 mm. | 7 | |
| 2 | { | Rump and upper tail-coverts slate-grey like rest of upper-parts | | <i>T. incana</i> , p. 635 |
| | { | Rump and upper tail-coverts entirely or partially white | 3 | |
| 3 | { | Lower back brown | 4 | |
| | { | Lower back white | 5 | |
| 4 | { | Wing over 170, bill over 45 mm. | | <i>T. melanoleuca</i> , p. 623 |
| | { | Wing under 170, bill under 45 mm. | | <i>T. flavipes</i> , p. 620 |

5	{	Inner secondaries, at least partially, pure white except at base	<i>T. totanus</i> , p. 624
		None of the inner secondaries pure white	6
6	{	Feet reddish	<i>T. erythropus</i> , p. 628
		Feet greenish	<i>T. nebularia</i> , p. 631
7	{	Shaft of 1st developed primary brown	8
		Shaft of 1st developed primary white	11
8	{	Upper tail-coverts white	<i>T. ochropus</i> , p. 616
		Upper tail-coverts brown	9
9	{	Tail almost square	<i>T. solitaria</i> , p. 618
		Tail well rounded, middle tail-feathers distinctly longer than lateral ones	10
10	{	Middle secondaries chiefly white	<i>T. hypoleucos</i> , p. 607
		Middle secondaries only white at base and tips	<i>T. macularia</i> , p. 610
11	{	Bill over 34 mm., much slenderer	<i>T. stagnatilis</i> , p. 634
		Bill under 34 mm., much stronger	<i>T. glareola</i> , p. 612

TRINGA HYPOLEUCOS*

405. *Tringa hypoleucos* L.—THE COMMON SANDPIPER.

TRINGA HYPOLEUCOS Linnæus, Syst. Nat., ed. x, i, p. 149 (1758—Europe.

Restricted typical locality: Sweden).

Totanus hypoleucos (Linnæus), Yarrell, III, p. 446; Saunders, p. 605.

DESCRIPTION.—*Adult male and female. Winter.*—Upper-parts (except nape) olive-brown, feathers with sepia shafts and mostly faintly edged light buff and (except those of crown) mostly with subterminal bar and irregular mottlings and shadings of sepia; upper tail-coverts with incomplete sepia barrings; nape greyish olive-brown, sometimes without dark shaft-streaks; sides of back and rump white; lateral upper tail-coverts with outer webs more or less white, barred sepia; ill-defined eye-stripe white, streaked olive-brown; lores olive-brown; ear-coverts, cheeks, sides of neck and lower-throat pale buff or white narrowly streaked olive-brown (sometimes ear-coverts and sides of neck more or less uniform greyish olive-brown); sides of upper-breast greyish olive-brown, feathers with sepia shafts and mostly with white tips; remaining under-parts white; under primary-coverts and under lesser coverts olive-brown towards base; tail-feathers olive-brown, two central pairs usually with a subterminal sepia bar and notched sepia along edge of feather, sometimes narrowly tipped white, remainder with broad white tips and more or less barred or notched sepia, two outer pairs more or less white barred or shaded sepia; primaries sepia, 3rd and succeeding with an irregular white patch about middle of inner webs, ill-defined on 3rd, occasionally indicated on 2nd, inner ones tipped white; secondaries sepia, tipped white and with a broad white band across middle of both webs, forming a

* As Linnæus spelt the name *Hypoleucos*, a substantive, "the Hypoleucos," not an adjective, we should not alter the gender. For the same reason the *Numenius*, which Linnæus called "the ARQUATA" of the older writers, must be called *Numenius arquata*.—E.H.

conspicuous wing-bar, 9th and sometimes 8th more or less white, 10th olive-brown sometimes edged and marked white ; innermost and their coverts as upper-parts ; primary-coverts sepia narrowly tipped white ; greater coverts olive-brown, broadly tipped white, inner ones with subterminal sepia shadings ; lesser coverts olive-brown edged and notched light buff with a subterminal bar of sepia ; median coverts same but usually notched sepia at sides and sometimes barred alternately buff and sepia with considerable individual variation in character and pattern of barring. N.B.—Upper-parts, innermost secondaries and wing-coverts are more olive in some than in others. Individuals occur with inner secondaries identical with those of *T. macularia*. This plumage is acquired by complete moult commencing July with body-feathers ; birds moulting remiges occur Sept. to March ; several Feb. and March had 4th, 3rd or 2nd primary in quill with, in most cases, summer body-feathers growing. *Summer*.—The body-feathers, tail-feathers, innermost secondaries and coverts, usually some median and lesser coverts are moulted Feb. to May ; (sometimes some winter body-feathers are retained). General coloration as winter but upper-parts (except nape), innermost secondaries and coverts, median and lesser coverts often bronze-brown, in others olive-brown ; crown, nape, mantle and scapulars streaked sepia, mantle and scapulars with arrow-shaped marks, bars and irregular mottlings of sepia, feathers faintly tipped light buff ; ear-coverts, cheeks, sides of neck, throat and upper-breast with pronounced sepia streaks ; remaining body-plumage as winter ; tail-feathers as winter but 4th to 6th pairs (from outside) often with incomplete sepia bars ; wing as winter but innermost secondaries and coverts as mantle ; new median and lesser coverts as winter or with two or three irregular wavy bars of sepia, and sometimes with arrow-shaped sepia marks and frecklings as mantle. N.B.—Abrasion of edges of feathers in late summer makes barrings and arrow-shaped markings of upper-parts more conspicuous.

Nestling (Plate 9).—Down on fore-head, crown and upper-parts light or warm buff, tipped sooty-black ; nape light buff, down with sooty-black bases ; from base of upper mandible to back of crown a narrow median black-brown line, another from nape to uropygial tuft, latter barred black and buff ; down at back of thighs white suffused buff and tipped sooty-black ; a black-brown line from base of upper mandible through eye ; sides of neck and lower-throat white, down sooty-black at base ; remaining under-parts white.

Juvenile.—Like adult winter but feathers of upper-parts (except nape) with subterminal sepia edgings and tipped warm buff, some with incomplete bars and notches of sepia and buff ; feathers of nape faintly edged light buff ; under-parts as adult but feathers of sides of neck and sides of breast faintly edged buff and often with faint subterminal sepia markings ; tail as adult but central, and sometimes outer, feathers tipped, edged and notched buff ; wing as adult but innermost secondaries and coverts as scapulars, median

coverts with buff tips deeper in shade. As in adult there is considerable individual variation in markings of wing-coverts.

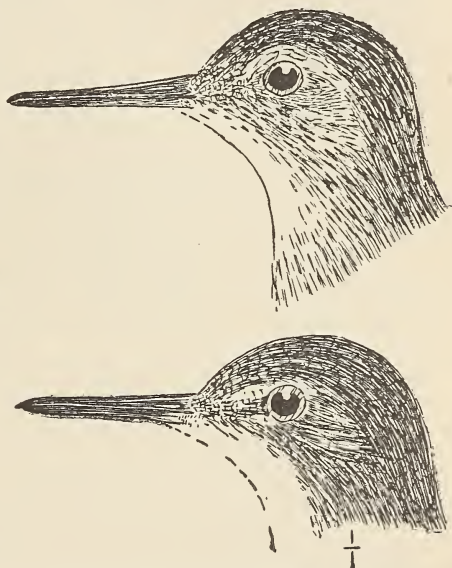
First winter.—Not to be distinguished from adult winter. The juvenile body-feathers, tail, innermost secondaries and coverts, some median and lesser coverts are moulted Aug. to Nov. but apparently not rest of wings.

Soft parts.—Bill dark brown ; legs and feet light greenish-grey ; iris brown.

Measurements and structure.—♂ wing 106–114 mm., tail 50–59, tarsus 22–24, bill from feathers 23–25 (12 measured). ♀ wing 110.5–119, bill 24–26. Primaries : 1st minute, 2nd longest, 3rd equal or 2–4 mm. shorter, 4th 4.5–8 shorter, 5th 10–16 shorter, 6th 19–23 shorter. Longest inner secondary varying in length between 3rd and 6th primaries. Tail fan-shaped, feathers rounded at tips. Bill short and straight, culmen slightly decurved at tip and with groove extending three-quarters of its length, inter-ramal space feathered. Tarsus scutellated before and behind. Four toes, outer and middle ones connected by a web up to about 1st joint.

CHARACTERS.—No subspecies recognized. Distinguished by small size, olive-brown back, rump and upper tail-coverts. For distinctions of *T. macularia* see under that species.

FIELD-CHARACTERS.—Bronze-brown above and white below except pale brown wash on throat and breast ; white tips to outer tail-feathers, and a well-defined white bar across whole width of expanded white-edged, crescent-shaped wing constitute a coloration unlike that of any other British wader. Actions equally distinctive, whether bird is tripping along at water's edge, curtsying and flirting its tail, or flying quickly, though with interrupted wing-beats, just above surface of stream or lake. Favourite haunts in breeding-season are mountain streams and tarns and reservoirs among hills, but many nest on banks of lowland meres and rivers. Higher ground is deserted so soon as young can fly, and from mid-July to end September occurs in estuaries, coastal marshes, and lowland districts, where it does not nest. Call-note, a loud “dee-



Juveniles of (upper figure) the Common Sandpiper (*Tringa hypoleucos*) with streaked throat ; (lower figure) the Spotted Sandpiper (*T. macularia*) with unstreaked throat.

dee-dee," often betrays passing migrants at night. Song, "kitty-needie, kitty-needie, kitty-needie," uttered as bird soars and then descends on quivering wings. When young in danger frenzied screaming is associated with alluring tactics of trailing wings and deflected and expanded tail.

BREEDING-HABITS.—Usually haunts banks of streams or rivers and sides of lochs. *Nest*.—Slight, a hollow in ground, generally not far from water, sometimes among shingle under butter-burr, or in grass, at edge of wood or on stony ground, and quite exceptionally on pollard-willow or in cornfields, lined grasses and bits of flood wrack. *Eggs*.—Normally 4, but 5 occasionally recorded, creamy-buff to warm reddish-buff ground, spotted with reddish and darker brown, chiefly at large end, and occasionally boldly blotched or almost unmarked. Average of 100 British eggs, 36.4×25.9 . Max. : 40×26.9 and 39×27.7 . Min. : 33.8×26.2 and 35.6×25 mm. *Breeding-season*.—About mid-May (occasionally early May) to early June according to latitude. *Incubation*.—Apparently chiefly, if not entirely, by female. Period 21–23 days. Single brooded.

FOOD.—Largely insects and their larvæ, coleoptera (especially water-beetles), diptera, Phryganeidæ, hymenoptera (*Lasius niger*, etc.), orthoptera, etc. Also water-spiders, worms, small mollusca and crustacea (sandhoppers and freshwater shrimps).

DISTRIBUTION.—*British Isles*.—Summer-resident (1st week April, occasionally March, early dates 11th Shropshire, 12th Yorks., 1912, to Sept. and early Oct. and occasionally Nov.). Breeds only exceptionally south and east of a line from Bristol Channel to Humber, but not uncommonly Devonian peninsula. West and north of this line breeds throughout England and Wales, and Scotland and its isles, and in Ireland except in south-east, where scarce. Elsewhere common passage-migrant, early April to end May and mid-July to early Oct., occasionally later and in winter.

DISTRIBUTION.—*Abroad*.—Greater part of Old World, nesting from Arctic Circle to Mediterranean Basin in Europe, and in Asia north Himalayas east to Japan, migrating in winter to east Atlantic islands, central and south Africa, India, East Indian Archipelago, Australia and Tasmania.

TRINGA MACULARIA

406. *Tringa macularia* L.—THE SPOTTED SANDPIPER.

TRINGA MACULARIA Linnæus, Syst. Nat., ed. XII, i, p. 249 (1766—Europe and America; Europe probably mistake. Restricted typical locality: Pennsylvania).

Totanus macularius (Linnæus), Yarrell, III, p. 452; Saunders, pp. 606, 605.*

DESCRIPTION.—*Adult male and female*. *Winter*.—Very like Common Sandpiper but feathers of mantle uniform, without, or with only faint, subterminal sepia bars; under-parts as Common Sandpiper

but ear-coverts and sides of neck usually uniform greyish olive-brown; lower-throat white with faint olive-brown shaft-streaks, not definitely streaked as Common Sandpiper; second pair of tail-feathers (from outside) with very little white (not white barred sepia as Common Sandpiper); wing as Common Sandpiper but 8th and 9th secondaries with a broad sepia band across middle and only tips and bases white; greater coverts with narrower white tips. This plumage is acquired by complete moult, body-moult commencing June, while birds moulting remiges occur in every month from Sept. to April. *Summer*.—The body-feathers, tail, innermost secondaries and coverts, usually most median and some lesser coverts are moulted Feb. to May. Upper-parts more broadly barred than in Common Sandpiper; under-parts white heavily spotted black-brown; tail-feathers as winter but usually with obsolete black-brown bars; innermost secondaries and new wing-coverts as upper-parts. N.B.—In late summer under-parts become whiter owing to abrasion of spots.

Nestling.—Apparently indistinguishable from nestling Common Sandpiper.

Juvenile.—Very like juvenile Common Sandpiper but feathers of mantle with less distinct subterminal sepia borders; ear-coverts and sides of neck uniform greyish olive-brown; throat white not streaked as Common Sandpiper; tail-feathers with less barring; 8th and 9th secondaries as adult; innermost secondaries and coverts except at tip without the sepia and buff notches along border of outer webs present in Common Sandpiper.

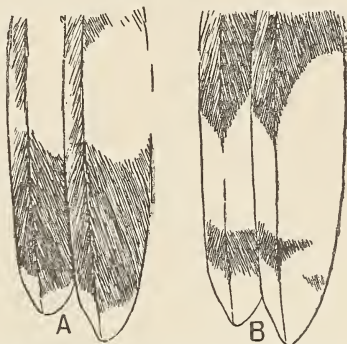
First winter.—Apparently indistinguishable from adult winter. The juvenile body-feathers, tail, innermost secondaries and coverts, some median and lesser coverts are moulted Sept. to Jan. but apparently not rest of wings.

Measurements and structure.—♂ wing 101–110 mm., tail 45–52, tarsus 20–23, bill from feathers 20–25 (12 measured). ♀ wing 105–115, bill 22–25. Primaries: 1st minute, 2nd longest, 3rd equal or 2.5 to 3.5 mm. shorter, 4th 5.5–8 shorter, 5th 12–15 shorter, 6th 20–22 shorter. Longest inner secondary varying in length between 5th and 2nd primaries. Other structure as in Common Sandpiper.

Soft parts.—Bill brown-black, base flesh-colour; legs pale greenish-yellow or greenish-olive; iris brown.

CHARACTERS.—No subspecies. Only to be confused with Common Sandpiper from which it is distinguished as described.

FIELD-CHARACTERS.—Round black spots on under-parts worn only



8th and 9th secondaries of—A. The Spotted Sandpiper (*Tringa macularia*). B. The Common Sandpiper (*T. hypoleucos*).

by adults, and conspicuous only at close range. Said by a visitor to United States from Old World to be identical with Common Sandpiper in manners, notes and appearance. (J. T. Nichols.)

BREEDING-HABITS.—Haunts neighbourhood of water, either rivers or lakes and pools. *Nest*.—Sometimes in grass, but at times on sandbanks, in cornfields or on rocky ground, slightly made of bents, moss and grasses in depression of ground. *Eggs*.—Normally 4, pyriform, pale clay-coloured or greyish in ground with dark chocolate-brown and ashy-grey markings. Average of 25 eggs, 33.1×23.9 . Max. : 35×23.3 and 34.1×24.8 . Min. : 31.3×22.6 mm. *Breeding-season*.—Second half May and June. *Incubation*.—No details available.

FOOD.—Includes insects, small worms, mollusca (snails) and has been seen to take fry of a fish (*Sicydium plumieri*).

DISTRIBUTION.—*British Isles*.—Very rare vagrant. Many recorded (cf. Saunders, p. 606) but only following can be admitted : Female near Finea (W. Meath) Feb. 2, 1899 (Saunders, p. 605*). Pair near Lydd (Kent), May 5, 1904 (J. L. Bonhote, *Bull. B.O.C.*, xiv, p. 84). Female Shoreham (Sussex) Nov. 27, 1908 (J. B. Nichols, *Brit. B.*, III, p. 377). One Hebden Bridge (Yorks.) about 1899 (W. Greaves, *Nat.*, 1911, p. 100 ; *Brit. B.*, iv, pp. 319, 369). One Whitby (Yorks.), March 29, 1849 (admitted by T. H. Nelson, *Birds Yorks.*, p. 628, doubted by J. H. Gurney, *Rambles of a Nat.*, p. 256). Two Pevensey (Sussex) May 23 and 24, 1913 (H. W. Ford-Lindsay, *Brit. B.*, vii, p. 58).

DISTRIBUTION.—*Abroad*.—Breeds in N. America from north-west Alaska and Newfoundland to south California, Arizona, Texas, Louisiana, and south Carolina ; winters from California, Louisiana, and south Carolina to south Brazil and Peru. Stragglers have occurred in Europe (Heligoland), west Germany, Lake of Constance, and Belgium.

TRINGA GLAREOLA

407. *Tringa glareola* L.—THE WOOD-SANDPIPER.

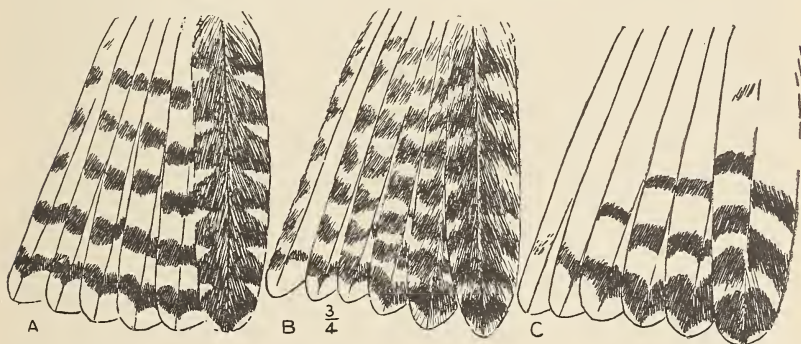
TRINGA GLAREOLA Linnæus, *Syst. Nat.*, ed. x, i, p. 149 (1758—Europe. Restricted typical locality : Sweden).

Tringa gallatoris (corrected to *gallatoria* in errata) Montagu, *Suppl. Orn. Dict.*, App. S, "Sandpiper-Long-legged" (1813—England. New name for *glareola*, which author thought doubtful).

Totanus glareola (Gmelin), Yarrell, III, p. 463 ; Saunders, p. 607.

DESCRIPTION.—*Adult male and female*. *Winter*.—Feathers of crown sooty ; nape and upper-mantle sooty-brown, feathers tipped and edged ashy-white ; mantle and scapulars same, feathers notched white, scapulars (and sometimes some feathers of mantle) notched and with a subterminal bar of black or black-brown ; back and rump sooty-brown, feathers edged white ; sides of rump white ; upper tail-coverts white, long feathers mostly irregularly marked black-

brown ; from top of lores to nape a white eye-stripe, streaked sooty-brown behind eye ; from lores to eye a sooty-brown streak ; ear-coverts sooty-brown, feathers edged white ; sides of neck ashy-white narrowly streaked sepia ; chin and upper-throat white ; cheeks and lower-throat white streaked and spotted sepia ; feathers of upper-breast and sides of body light drab with sepia shafts and more or less tipped white ; flanks white with some irregular marks and bars of sepia ; belly and vent white ; under tail-coverts white with central streaks or irregular barrings of sepia ; axillaries barred white and sepia ; under wing-coverts white irregularly marked sepia ; under lesser coverts sepia broadly edged white ; tail feathers : central pair sepia barred black-brown or black and



Half the tails of adults of—A. The Solitary Sandpiper (*Tringa s. solitaria*). B. The Wood-Sandpiper (*T. glareola*). C. The Green Sandpiper (*T. ochropus*).

notched and tipped white, others barred white and sepia, outer ones with inner webs more or less white ; primaries and their coverts black-brown or sepia, 2nd primary with shaft white, 8th and succeeding narrowly edged white at tip ; secondaries sepia, tipped and bordered white, innermost and coverts as scapulars ; greater and median coverts sooty-brown, tipped white and more or less notched white and black-brown ; lesser coverts black-brown faintly edged white. This plumage is acquired by complete moult commencing in July with body-feathers, while birds moulting remiges occur from Sept. to March. N.B.—Some Feb. and March specimens were acquiring summer-plumage on body and had 2nd primary in quill. *Summer*.—The body-feathers, sometimes tail-feathers, innermost secondaries and coverts, usually most median and some lesser coverts are moulted Jan. to May but apparently not rest of wings (occasional contemporaneous primary-moult being considered as delayed completion of moult to winter plumage). As winter but crown broadly streaked black-brown, feathers broadly edged white or light buff ; nape as crown but usually more narrowly streaked ; mantle and scapulars black or black-brown, feathers broadly edged

and notched white ; remaining upper-parts as winter ; ear-coverts, cheeks, sides of neck and lower-throat white heavily streaked and spotted sepia ; upper-breast white, more or less spotted or streaked and sometimes barred sepia ; flanks white with irregular broad sepia bars ; remaining under-parts and tail as winter ; wing as winter but innermost secondaries and coverts as scapulars ; median and a few lower lesser coverts tipped and broadly notched or barred white.

Nestling.—Down on fore-head and broad eye-stripes (which almost meet on nape) light pink-cinnamon ; black median line from base of upper mandible to crown ; crown black-brown irregularly marked pink-cinnamon ; nape and uropygial tuft black-brown, down with light pink-cinnamon tips ; a broad black median band from nape to uropygial tuft ; a black-brown line along wing, another along either side of rump ; a black-brown patch from uropygial tuft towards wing and a sooty-brown patch around tibia ; remaining upper-parts light pink-cinnamon ; a black line from lores through eye to nape ; upper-breast white, down with long pink-cinnamon tips ; remaining under-parts white.

Juvenile.—Like winter adult but feathers of crown, nape, whole mantle and scapulars warm sepia or black-brown edged and broadly notched warm buff ; central short upper tail-coverts white with (usually) faint terminal dusky lines ; lower-throat and upper-breast as adult but streaks usually more pronounced ; remaining under-parts as adult ; tail as adult but central pair tipped buff ; wing as adult but innermost secondaries and coverts as scapulars and median and lower lesser coverts warmer sepia tipped and notched warm or light buff, innermost median notched warm or light buff at sides of feathers and without buff tips.

First winter.—As adult winter and only to be distinguished when buff notches to innermost median coverts are not too worn and faded. The juvenile body-feathers, sometimes all tail-feathers, sometimes apparently central pair only and sometimes no tail-feathers, innermost secondaries and coverts, some median and lesser coverts but not rest of wings are moulted Sept to Jan. *First summer*.—Only to be distinguished from adult summer by buff notches to innermost median coverts when not too abraded. Mould as adult.

Measurements and structure.—♂ wing 120–128 mm., tail 44–52, tarsus 34–38, bill from feathers 25–29 (12 measured). ♀ wing 125–130, bill 25–31. Primaries : 1st minute, 2nd longest, 3rd equal or 2–4 mm. shorter, 4th 4.5–10 shorter, 5th 13–18 shorter, 6th 20–25 shorter. Longest inner secondary between 3rd and 7th primaries. Tail very slightly rounded, central pair longest. Bill short, straight and slender, groove in upper mandible extending about half length of culmen. Legs long, a good deal of tibia exposed, tarsus scutellated before and behind. Toes long and slender, hind toe present, outer and middle ones webbed at base about up to 1st joint, middle and inner ones indistinctly webbed at base.

Soft parts.—Bill (ad.) black-brown, base of both mandibles greenish-olive, (juv.) dusky-brown paling to greenish-olive; legs and feet (ad.) pale greenish-olive, (juv.) ochreous-yellow or greyish-ochreous; iris very dark brown.

CHARACTERS.—No subspecies. White axillaries barred sepia, more or less white upper tail-coverts and narrowly barred tail distinguish species in all plumages.

FIELD-CHARACTERS.—On ground looks smaller but has relatively longer legs than Green Sandpiper; breast and flanks spotted, and pale spots on back larger, but latter characters only discernible at very close quarters. Despite greyish-white underwing is not in flight such a strikingly black and white bird. Passage-migrant, more frequent in autumn, resorting to marshes, sewage-farms and open moorland with shallow pools. Alarm-note sharp “giff, giff, giff.” Miss Haviland renders love-song “taludle taludle lirra lirra taludle.”

BREEDING-HABITS.—Haunts open moors, swamps and in Siberia wooded banks of great rivers. *Nest*.—In Europe generally a hollow on ground among heath and ling, etc., but is also known at times to lay in old nests of other birds, such as Fieldfare (*Turdus pilaris*) and Great Grey Shrike (*Lanius excubitor*). *Eggs*.—Normally 4, pyriform, pale green in ground-colour as a rule when fresh, but sometimes creamy-white, boldly spotted and blotched with dark reddish-brown and ashy shell-marks, chiefly at large end. Average of 100 eggs, 38.3×26.4 . Max.: 42×28.1 and 41.5×28.5 . Min.: 35.5×25 and 37×24.4 mm. *Breeding-season*.—In central Europe last week May and early June, but in north through June. *Incubation*.—Shared by sexes, male taking considerable part. Period not precisely known.

FOOD.—Chiefly insects and their larvæ, especially coleoptera (*Gyrinus*, *Hydroporus*, *Donacia*, *Colymbetes*, *Haliplus*, *Dytiscus*, *Hydrochus*, *Berosus*, *Dryops*, *Helichus*, *Phyllobius*, etc.), diptera (larvæ of *Stratiomys*), rhynchota (*Plea*), etc. Also spiders, worms, and small mollusca.

DISTRIBUTION.—*British Isles*.—Passage-migrant. Regular (generally single, sometimes flocks) autumn (July–Oct.), uncommon spring (April–May) on east and south-east coasts England, rare along south coast. Rare vagrant, west coast England and Wales, in Scotland and in Ireland (seven). Exceptionally inland. Bred Prestwick Car (Northumberland) 1853, and possibly previously, possibly Norfolk prior to 1846, but alleged breeding Elgin 1853 discredited.

DISTRIBUTION.—*Abroad*.—Breeds in north Europe and north Asia, and winters in Mediterranean countries, Africa, and south Asia to Australia and Hawaiian Isles. Casual Canaries and Færoes.

TRINGA OCHROPUS

408. *Tringa ochropus* L.—THE GREEN SANDPIPER.

*TRINGA OCHROPUS** Linnæus, Syst. Nat., ed. x, i, p. 149 (1758—"Habitat in Europa." Restricted typical locality: Sweden).

Totanus ochropus (Linnæus), Yarrell, III, p. 457; Saunders, p. 609.

DESCRIPTION.—*Adult male and female.* *Winter.*—Crown and nape grey-brown; mantle and scapulars olive-brown, feathers with dark shafts and grey-brown tips, some faintly notched light buff and black-brown (most numerous and pronounced on scapulars); back and rump olive-brown, feathers edged white; upper tail-coverts white; from base of upper mandible to above centre of eye a white band, some feathers spotted grey-brown; loreal streak olive-brown; cheeks white streaked olive-brown; chin white; throat and centre of upper-breast white streaked olive-brown; sides of neck and upper-breast grey-brown; flanks white (sometimes a few olive-brown bars); axillaries sepia narrowly barred white; under wing-coverts sepia, edged and some barred white; tail-feathers white broadly banded black-brown, bands more or less coalescing on central pair, three outer pairs more or less white; primaries blackish olive-brown, inner webs paler; secondaries olive-brown, innermost and coverts as scapulars; primary-coverts black-brown; greater coverts olive-brown, some faintly notched light buff and sepia; median and lower lesser coverts as mantle, upper lesser coverts uniform olive-brown faintly edged white, innermost median and lesser narrowly tipped white and some notched at sides light buff. This plumage is acquired by complete moult Aug. to Dec. *Summer.*—The body-feathers (not always all scapulars), usually tail-feathers, some innermost secondaries and coverts, usually some median and lesser coverts are moulted Dec. to May but not rest of wings. Resembles winter plumage but crown and nape broadly streaked olive-brown, feathers bordered and notched white at sides; feathers of mantle and scapulars with larger and more numerous notches of white or light buff and sepia, scapulars faintly tipped white; remaining upper-parts as winter; cheeks, sides of neck, lower-throat and upper-breast white heavily streaked olive-brown, feathers at sides of upper-breast olive-brown, notched, tipped and irregularly marked white; remaining under-parts and tail as winter; wing as winter but innermost secondaries and coverts as scapulars, new median coverts with larger and more numerous white and sepia notches.

Nestling.—Like nestling Wood-Sandpiper but crown more broken up with light pink-cinnamon; nape black-brown, down with greyish-white tips; remaining upper-parts as in Wood-Sandpiper but intermixed with deeper pink-cinnamon; eye-stripe and cheeks greyish-white; upper-breast white, down with sooty-black bases.

Juvenile.—Like adult winter but crown and nape olive-brown,

* In "*ochropus*" the h was evidently misplaced, and we should correct the spelling to *ochropus*, for which it was meant.—E.H.

feathers sometimes edged light buff; feathers of mantle and scapulars without grey-brown tips and plentifully notched pink-buff; lower-throat and upper-breast more closely streaked olive-brown; sides of breast as mantle; central pair tail-feathers more or less suffused buff; wing as adult but innermost secondaries and coverts as scapulars; median and lower lesser-coverts as mantle.

First winter.—As adult and only to be distinguished by pink-buff notches at sides and tips of innermost median coverts. The juvenile body-feathers, tail, some innermost secondaries and coverts, some median and lesser coverts are moulted Aug. to Dec. *First summer*.—Distinguished from adult by same characters as in first winter.

Measurements and structure.—♂ wing 136–148 mm., tail 52–61, tarsus 32–34, bill from feathers 33–35 (12 measured). ♀ wing 142–153, bill 33–36. Primaries: 1st minute, 2nd longest, 3rd 2–5.5 mm. shorter, 4th 7–12 shorter, 5th 14–20 shorter, 6th 24–29 shorter. Longest inner secondary between 4th and 6th primaries. Tail square. Bill short and slender, groove in upper mandible extending more than half length of culmen. Legs and feet as in Wood-Sandpiper.

Soft parts.—Bill black-brown, dark green at base; legs and feet olive-green; iris dull brown.

CHARACTERS.—No subspecies. Sepia axillaries narrowly barred white, white upper tail-coverts and broadly barred tail distinguish species in all plumages.

FIELD-CHARACTERS.—Shyer than Wood-Sandpiper, is seldom noticed until it rises with a sharp “tui tui tui,” zig-zags in rapid flight for a few yards, then mounts high and goes clear away. White under-parts, rump and tail-coverts contrasting with green upper-parts make it as strikingly black and white as Lapwing. Black under-wing distinguishes it at once from Wood-Sandpiper. Mainly a passage-migrant, a few winter, frequenting, singly as a rule, swamps, brooks, drains, and gutters on salt-marshes. Much attached to certain feeding-grounds, and, shy though it is, may be flushed day after day from same spot.

BREEDING-HABITS.—Chiefly found breeding in marshy forests, not far from pools or rivers. *Nest*.—Occasionally on ground, more often on fallen trees, stumps or accumulations of pine-needles or branches but usually in old nests of Fieldfare, Mistle-Thrush, Song-Thrush, Blackbird, Jay, Red-backed Shrike, Pigeon or squirrel. *Eggs*.—Normally 4, occasionally 3 only, pyriform, pale greenish to warm buff or pale ochreous in ground-colour, rather sparingly spotted with purple-brown and ashy-grey. Average of 82 eggs, 39×27.9 . Max.: 42×28 and 41.1×30.3 . Min.: 34.6×26 and 34.8×25.5 mm. *Breeding-season*.—From mid-April through May and June in central Europe, from mid-May in Scandinavia and as late as July in Siberia. *Incubation*.—Apparently by female but data lacking. Probably normally single brooded.

FOOD.—Chiefly insects and their larvæ, especially coleoptera and larvæ of Phryganeidæ and diptera. Also spiders, woodlice and small red worms.

DISTRIBUTION.—*British Isles*.—Passage-migrant (latter half March to end May and mid-July to early Nov.). Frequent autumn and spring England and Wales and often staying throughout winter. Occasionally observed throughout summer, and breeding often suspected but never proved. In Scotland fairly frequent east, more casual west, very rare north, apparently regularly small numbers autumn and occasional spring, Fair Isle, and occasional autumn Orkneys and Hebrides. In Ireland casual autumn and winter-visitor and twice spring (April and June).

DISTRIBUTION.—*Abroad*.—North Europe and north Asia, south to Germany, Carpathians, Transcaspia, Turkestan, in winter south to Africa (even South Africa), India, China to Formosa, Philippines, the Malayan Archipelago. Accidental in Nova Scotia and (?) Hudson Bay.

TRINGA SOLITARIA

409. *Tringa solitaria solitaria* Wilson.—THE SOLITARY SAND-PIPER.

TRINGA SOLITARIA Wilson, Amer. Orn., VII, p. 53, pl. 58, fig. 3 (1813—"Highest Mts. from Kentucky to New York").

Totanus solitarius (Wilson), Yarrell, III, pp. x and 468; Saunders, p. 611.

DESCRIPTION.—*Adult male and female*. *Winter*.—Like Green Sandpiper but crown, nape, mantle and scapulars olive-brown, without grey-brown tips, feathers narrowly edged light buff; back, rump, and central upper tail-coverts olive-brown, feathers edged and notched white; lateral upper tail-coverts more or less barred black-brown and white; lower-throat and upper-breast more finely streaked and usually suffused buff; some under tail-coverts irregularly barred black-brown; axillaries and under wing-coverts more broadly barred and edged white; central pair of tail-feathers olive-brown, tipped white and notched white and black-brown on outer webs, remainder white all broadly barred black-brown; wing as in Green Sandpiper but outer webs of outer primaries, primary-coverts and bastard-wing black; innermost secondaries and coverts and median coverts as mantle; innermost median and lesser coverts narrowly tipped and notched white; lesser coverts black-brown faintly edged buff, those at edge of wing darker. This plumage is acquired by complete moult Aug. to Jan. or even Feb., birds moulting outer remiges occur in Jan. *Summer*.—The body-feathers, apparently not always all scapulars, central or all tail-feathers, some innermost secondaries and coverts, usually some median and lesser coverts are moulted Feb. to May but not rest of wings. Similar to Green Sandpiper but distinguished by characters already mentioned.

Nestling.—(Not examined.)

Juvenile.—Like Green Sandpiper but distinguished by same characters as in adult winter and in addition has upper-parts notched paler buff; back and rump as adult but feathers notched and edged light buff and sepia; upper-breast suffused buff and more narrowly streaked than in Green Sandpiper; central tail-feathers as adult but notched light buff; wing as adult but innermost secondaries and coverts and median coverts as upper-parts.

First winter.—As adult and only to be distinguished when buff notches at sides and tip of innermost median coverts are not too abraded. The body-feathers, not tail in those examined, some innermost secondaries and coverts, apparently some median and lesser coverts are moulted in autumn but apparently not usually rest of wings (one ♂ and one ♀ Dec. and Jan. with rectrices and remiges in quill). *First summer*.—(Not examined.)

Measurements and structure.—♂ wing 126–133.5 mm., tail 46–54, tarsus 26–30, bill from feathers 26–30.5 (12 measured). ♀ wing 130–138, bill 28–30. Primaries: 1st minute, 2nd longest, 3rd 2–4 mm. shorter, 4th 6–10 shorter, 5th 16–19 shorter, 6th 24–28 shorter. Longest inner secondary between 4th and 7th primaries. Tail slightly rounded, not square as in Green Sandpiper, but other structure same.

Soft parts.—Bill black-brown, green at base of lower mandible; legs dull green; iris dark brown.

CHARACTERS AND ALLIED FORMS.—*T. s. cinnamomea* (western N. America) is said to be larger. Olive-brown back, rump and upper tail-coverts distinguish this species from its near allies.

FIELD-CHARACTERS.—Under surfaces of wings appear blackish. Spread tail, when about to alight, appears white, with a contrasting dark centre. Frequents upland or woodland streams and pools, also coastal marshes at times. Flight swift and darting; when alighting drops down abruptly like a Snipe (*Gallinago*). When flying only a few yards has a peculiar jerky flight with wings partially spread. Flight-note a sharp “peet-weet” or “peet-weet-weet,” very like that of Spotted Sandpiper, but sharper. (J. T. Nichols.)

BREEDING-HABITS.—Makes use of old nests of other birds in trees in “muskegs” or wooded swamps. Nests of following species have been occupied: Canada Jay, Cedar-Waxwing, King-Bird, American Robin, Brewer’s Blackbird, and Bronzed Grackle. *Eggs*.—Normally 4, rarely 5, pyriform, pale greenish in ground, blotched and spotted chiefly at large end with vandyke-brown, chestnut and ashy-grey. Average of 27 eggs, 35.7×25.4 . Max.: 38.1×26.1 and 37.3×26.6 . Min.: 33.7×23.8 mm. *Breeding-season*.—In Alberta, June. *Incubation*.—No details. Probably single brooded.

FOOD.—Insects and their larvæ, including the smaller odonata. Also small mollusca, worms, small crustacea, spiders, and has been known to take fry of fish (*Sicydium*).

DISTRIBUTION.—*Great Britain*.—Seven. Banks of Clyde (Lanark) some years previous to 1870. Scilly Isles, Sept. 21, 1882. Near Marazion (Cornwall), Oct., 1884 (Saunders, p. 611). Rye Harbour (Sussex), Aug. 7, 1904 (C. B. Ticehurst, *Bull. B.O.C.*, xv, p. 12; cf. *Brit. B.*, II, p. 269). Littlestone (Kent), seen July 18, shot Aug. 15, 1908 (Duchess of Bedford, *Brit. B.*, II, pp. 136, 170). Pevensey (Sussex) one April 17, 1914, one May 30, 1916 (J. B. Nichols, *op. c.*, VIII, p. 13, XII, p. 93).

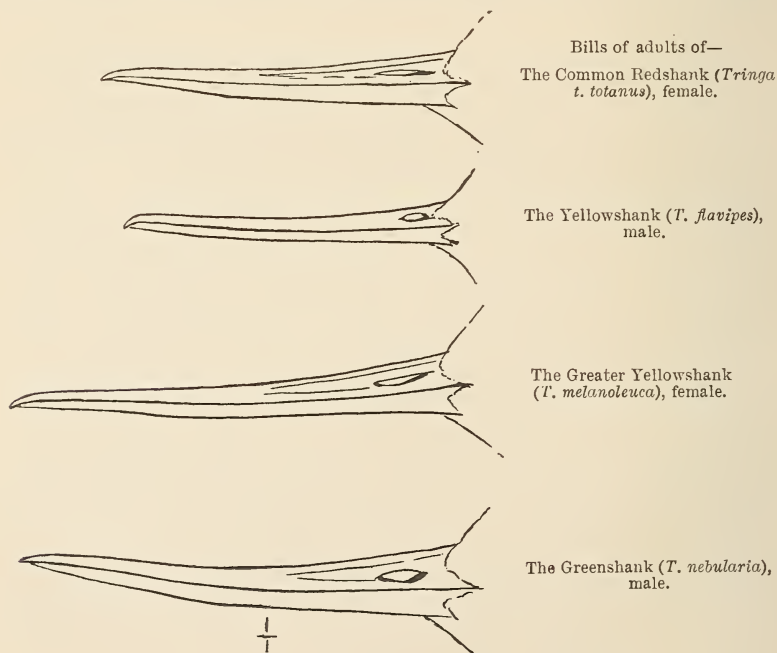
DISTRIBUTION.—*Abroad*.—In summer in northern N. America, winters from West Indies to Argentina, and has been recorded from Greenland and Bermudas. Replaced by a closely-allied form in westernmost N. America.

TRINGA FLAVIPES

410. *Tringa flavipes* (Gm.)—THE YELLOWSHANK.

SCOLOPAX FLAVIPES Gmelin, Syst. Nat., I, ii, p. 659 (1789—New York).
Totanus flavipes (Gmelin), Yarrell, III, p. 480; Saunders, p. 613.

DESCRIPTION.—*Adult male and female*. *Winter*.—Fore-head and nape ash-brown, feathers narrowly edged white; crown, mantle



and scapulars ash-brown, feathers with sepia shaft-streaks and lighter tips and faintly edged greyish-white, scapulars mostly notched black-brown and narrowly edged white; back and rump

dark ash-brown, feathers tipped white ; upper tail-coverts white more or less barred ash-brown ; eye-stripe white more or less streaked ash-brown ; loreal streak ash-brown ; ear-coverts and cheeks white, spotted and streaked ash-brown ; sides of neck, lower-throat and upper-breast white narrowly streaked ash-brown or sepia (upper-breast sometimes finely freckled ash-brown), sides of upper-breast as mantle ; sides of body and flanks white irregularly barred or freckled ash-brown ; axillaries and under wing-coverts barred white and ash-brown ; remaining under-parts white ; two central pair tail-feathers ash-brown, barred or notched black-brown and narrowly edged white, remainder white more or less barred, marked or shaded ash-brown ; primaries black-brown, lighter on inner webs, 2nd with white and rest with sepia, shafts, inner ones narrowly tipped white ; secondaries dark ash-brown narrowly edged white ; innermost secondaries and greater and median coverts as scapulars, innermost median broadly edged white ; primary-coverts black-brown ; lesser coverts dark ash-brown narrowly bordered white. This plumage is acquired by complete moult commencing with body-feathers in July and remiges in autumn and winter and even spring (Feb. and March). *Summer*.—Most body-feathers, usually all tail-feathers, some innermost secondaries and coverts, usually a good many median coverts and sometimes a few lesser coverts are moulted Feb. to April. Crown and nape broadly streaked black-brown, feathers bordered white ; mantle and scapulars black-brown, feathers tipped and notched ash-brown or white, some scapulars ash-brown with obsolete black-brown bars and notched white or light ash ; back, rump and upper tail-coverts as winter but tail-coverts usually more heavily barred ; cheeks, sides of neck, lower-throat and breast boldly streaked sepia ; feathers at sides of upper-breast more or less ash-brown and sepia, mostly tipped and irregularly marked white ; flanks white broadly barred ash-brown ; tail and wing as winter but innermost secondaries and coverts as scapulars ; new median coverts barred and marked black-brown and tipped and notched white.

Nestling.—(Not examined.)

Juvenile.—Like adult winter but crown and nape sepia, feathers narrowly edged light buff or white ; mantle and scapulars sepia notched light or pink-buff, scapulars and sometimes some feathers of mantle notched black-brown ; back and rump ash-brown, feathers notched and edged light buff or white ; lower-throat and upper-breast as adult but streaks broader ; tail-feathers usually more closely barred (barring sometimes obsolete), and narrower and more pointed than in adult ; wing as adult but innermost secondaries and coverts as scapulars but black-brown notches larger ; greater and median coverts sepia, edged and notched light buff ; lesser coverts sepia, narrowly edged light buff or white.

First winter.—As adult and only distinguished by faded and worn sepia wing-coverts with worn buff notches, and worn juvenile tail-feathers. The juvenile body-feathers, not all scapulars, some-

times central pair of tail-feathers, innermost secondaries and coverts, not wing-coverts in those examined, are moulted Aug. to Jan. but not rest of wings. *First summer*.—Not examined. One March and one June were in worn winter-plumage, former acquiring fresh winter-feathers.

Measurements and structure.—♂ wing 151–166 mm., tail 57–64, tarsus 47–54, bill from feathers 35–40 (12 measured). ♀ wing 156–165, bill 34–39. Primaries : 1st minute, 2nd longest, 3rd 2.5–6 mm. shorter, 4th 9–14 shorter, 5th 18–24 shorter, 6th 28–38 shorter. Longest inner secondaries between 5th and 7th primaries. Tail square, central pair very slightly longer than rest, 2nd and 3rd pair very slightly shorter than 1st (outer) pair. Bill straight and slender ; groove in upper mandible extending less than half length of culmen. Legs long, lower portion of tibia exposed, tibia and tarsus scutellated in front and behind. Four toes, middle and outer ones webbed to about 1st joint, middle and inner ones very slightly webbed at base.

Soft parts.—Bill black ; legs and feet yellow ; iris dark brown.

CHARACTERS.—No subspecies. Dark ash-brown back and rump, white upper tail-coverts more or less barred ash-brown, and ash-brown secondaries, distinguish this species from its near allies ; for distinctions from *T. melanoleuca* see under that species.

FIELD-CHARACTERS.—In flight wings uniform dark grey, unrelieved by any paler stripe or shade. Tail (actually barred) conspicuously spread on alighting makes a bold uniformly white mark. Legs bright yellow. On ground a slender, tall, long-legged bird. Favourite feeding ground stubble on the marsh with standing pools of water. Note in flocks abrupt, “kip” or “keup,” when single more often a full whistled “wheu” or “wheu-wheu.” One-quarter smaller than Greater Yellowshank. (J. T. Nichols.)

BREEDING-HABITS.—Haunts barren lands of north-west. *Nest*.—Mere depression in ground, scantily lined with dead leaves or grasses, usually not far from water. *Eggs*.—Normally 4, sometimes 3 only, pyriform, yellowish-buff in ground, handsomely blotched with chocolate-brown, shading into blackish-brown and ashy-grey shellmarks, chiefly at large end. Occasionally almost unmarked. Average of 5 eggs, 42.6×29.4 mm. *Breeding-season*.—June. *Incubation*.—Apparently chiefly by female but details lacking. Probably single brooded.

FOOD.—Insects and their larvæ, small crustacea, worms, and occasionally fry of fish (*Sicydium*.)

DISTRIBUTION.—*Great Britain*.—Six. Misson (Notts.) 1854 (?). Near Marazion (Cornwall) Sept. 12, 1871 (Saunders, p. 613). Fair Isle (Shetlands), Sept. 24, 1910 (W. E. Clarke, *Ann. S.N.H.*, 1911, p. 53). Male and female Camber (Sussex), Aug. 15, 1914 (H. W. Ford-Lindsay, *Brit. B.*, VIII, p. 121). One Tresco, Scilly Is., Sept. 2, 1920 (H. Langton, *Bull. B.O.C.*, XLI, p. 26).

DISTRIBUTION.—*Abroad*.—Breeds from Kotzebue Sound, Alaska, north Mackenzie, central Keewatin, and south Ungava to valley of Upper Yukon, south Saskatchewan, and north Quebec ; winters in Argentina, Chile, and Patagonia, and casually in Mexico, Florida, and Bahamas. Also recorded from Pribilof Islands, Greenland, and Bermudas.

TRINGA MELANOLEUCA

411. *Tringa melanoleuca* (Gm.)—THE GREATER YELLOWSHANK.

SCOLOPAX MELANOLEUCA Gmelin, Syst. Nat., i, ii, p. 659 (1789—Labrador).

Totanus melanoleucus (Gmelin), A. F. Griffith, Bull. B.O.C, xix, p. 7 ; Saunders, Brit. B., i, p. 16.

DESCRIPTION.—*Adult male and female*. *Winter*.—Like *T. flavipes* but feathers of crown and nape with broader white edges giving a streaked appearance ; feathers of mantle and scapulars more or less notched white and black-brown and tipped white ; primaries sometimes more or less freckled white towards base of inner webs, inner ones more broadly tipped and sometimes notched white ; secondaries usually boldly notched white on outer webs, inner webs deeply indented with white ; greater coverts as mantle ; median coverts broadly fringed white and notched white and sepia. This plumage is acquired by complete moult Aug. to Jan. commencing with body-feathers in Aug. *Summer*.—Most body-feathers, usually all tail-feathers, usually all innermost secondaries and coverts, most median coverts and some lesser coverts are moulted Feb. to May but not rest of wings. Like *T. flavipes* but streaks on crown and nape broader ; sides of neck, lower-throat and upper-breast more broadly streaked black-brown ; feathers at sides of breast and flanks white with irregular black-brown bars ; rest of breast white irregularly barred and spotted black-brown ; new median coverts black-brown, tipped and deeply notched white.

Nestling.—(Not examined.)

Juvenile.—Like *T. flavipes* but upper-parts darker ; crown black-brown ; mantle and scapulars black-brown with larger buff notches ; sides of neck and lower-throat and breast more broadly streaked and flanks more broadly barred ; wing as adult but innermost secondaries and coverts as scapulars ; greater and median coverts sepia notched black-brown and light buff and tipped light buff ; lesser coverts sepia narrowly edged light buff or white.

First winter.—As adult and only to be distinguished by worn and faded sepia wing-coverts with abraded notches. The juvenile body-feathers, not all scapulars, one or two central pairs of tail-feathers, usually all or most innermost secondaries and coverts, some median and lesser coverts are moulted Sept. to Feb. *First summer*.—Apparently acquires a little breeding plumage or moults entirely into winter-plumage ; distinguished from adult by worn sepia wing-coverts.

Measurements and structure.—♂ wing 191–198 mm., tail 72–78, tarsus 60–63, bill from feathers 53–57 (12 measured). ♀ wing 184–206, bill 53–61. Primaries: 1st minute, 2nd longest, 3rd 2.5–5 mm. shorter, 4th 9–14 shorter, 5th 19–24 shorter, 6th 30–38 shorter. Longest innermost secondary between 5th and 6th primaries. Other structure as in *T. flavipes*.

Soft parts.—Bill black, base olive-green, legs and feet orange; iris brown.

CHARACTERS.—No subspecies. Most likely to be confused with *T. flavipes*.

FIELD-CHARACTERS.—A counterpart of Yellowshank, one-third larger. Relatively longer bill is only reliable field-mark except for notes. These are usually distinguishable, louder, clearer, higher-pitched, more ringing and modulated whistles. They are usually two, three or more syllabled, “wheu-wheu,” “wheu wheu wheu wheu,” whereas corresponding call of Yellowshank is rarely more than two syllables. Less gregarious than Yellowshank, wilder, more restless, and noisy. When alighted, more given to plover-like bobbing of head and neck. Feeds entirely by snatching, never probing. (J. T. Nichols.)

BREEDING-HABITS.—Very little on record. *Nest.*—Depression in ground not far from water and with trees in immediate neighbourhood from which parents keep watch. *Eggs.*—4, pyriform, boldly blotched with brown and ashy-grey on pale ochreous ground but exact measurements not available and details of incubation, etc., lacking.

FOOD.—Insects and their larvæ, worms and fry of fish recorded (minnow and fry of *Sicydium*).

DISTRIBUTION.—*England.*—Two. Tresco, Scilly Isles, Sept. 16, 1906 (*ut supra*). Winchelsea (Sussex) Oct. 4, 1915 (H. W. Ford-Lindsay, *Brit. B.*, ix, p. 213). [One said to have been shot in Warwickshire, Nov. 22, 1907, *cf. Brit. B.*, iv, p. 109.]

DISTRIBUTION.—*Abroad.*—Breeds in northern N. America from Lake Iliamna, Alaska, and south Mackenzie to south British Columbia, Ungava, Labrador, Newfoundland, islands in Gulf of St. Lawrence; winters from south California, Texas, Louisiana, and Georgia (casually north Carolina) south to Patagonia; in Bermudas on migration.

TRINGA TOTANUS 116

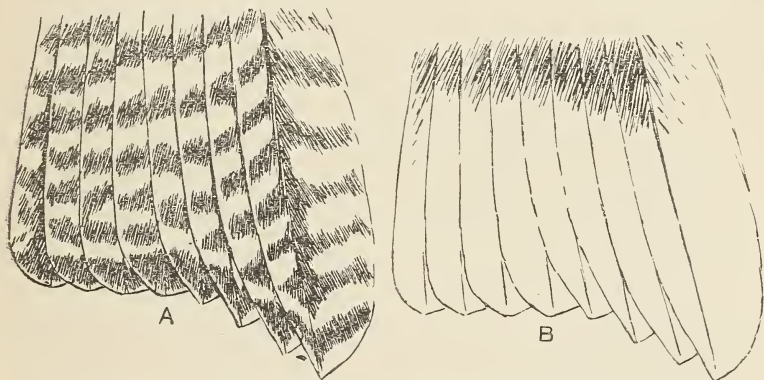
412. *Tringa totanus totanus* (L.)—THE COMMON REDSHANK.

SCOLOPAX TOTANUS Linnæus, *Syst. Nat.*, ed. x, i, p. 145 (1758—Europe. Restricted typical locality: Sweden).

Totanus calidris (Linnæus), Yarrell, iii, p. 469; Saunders, p. 615.

DESCRIPTION.—*Adult male and female.* *Winter.*—Crown, nape, mantle and scapulars dark ash-brown, feathers with light greyish-olive or faint white tips mostly with sepia shafts, lower scapulars

sometimes notched black-brown ; back and rump white (sometimes some feathers with irregular streaks or markings of ash-brown) upper tail-coverts barred white and black-brown ; eye-stripe white more or less streaked dusky, sometimes ill-defined ; loreal streak ash-brown ; white line under eye ; cheeks whitish ; sides of neck ash-brown, feathers mostly streaked sepia ; chin and throat white, sometimes spotted sepia ; lower-throat and upper-breast light ash-brown or white, feathers mostly narrowly streaked sepia ; sides of breast as mantle ; remaining under-parts white but sides of belly and flanks usually irregularly marked or spotted sepia ; belly and vent sometimes spotted sepia ; under tail-coverts more or less barred black-brown ; axillaries and under wing-coverts sometimes spotted or barred sepia ; tail-feathers closely barred black-brown and white, central ones more or less suffused ash-brown ; primaries



Inner secondaries of—A. The Spotted Redshank (*Tringa erythropus*). B. The Common Redshank (*T. t. totanus*).

black-brown, inner webs sepia, with a broad white streak towards base, more or less freckled dusky, inner ones tipped white and with inner webs more or less white freckled sepia, 2nd with white, rest with sepia shafts ; secondaries white with ash-brown bases, 10th more or less shaded and marked sepia, innermost and coverts as scapulars, sometimes with obsolete sepia bars and notches ; primary-coverts black-brown ; greater coverts ash-brown broadly tipped and more or less barred or freckled black-brown ; median coverts ash-brown narrowly tipped white with obsolete bars or spots of black-brown at sides, innermost ash-brown fringed white ; lesser coverts ash-brown faintly edged white. This plumage is acquired by complete moult July to Jan. N.B.—One or two examined had upper-parts more or less streaked, and scapulars, innermost secondaries and median coverts more or less barred, black-brown. *Summer*.—The body-feathers, sometimes tail-feathers, some innermost secondaries and coverts, sometimes most median and a few lesser coverts are moulted Jan. to May but not rest of wings ; sometimes some winter body-feathers are retained. Crown broadly streaked

black-brown, feathers edged pink-buff and drab ; nape same but streaks narrower ; mantle and scapulars drab, feathers faintly tipped white and irregularly streaked, barred or marked black-brown and more or less margined pink-buff ; ear-coverts, cheeks, sides of neck, chin, throat and breast white streaked and spotted black-brown ; sides of breast as mantle ; flanks and under tail-coverts more heavily barred than in winter ; rest of body-plumage as winter ; tail as winter but central pair sometimes suffused pink-buff ; wing as winter but new innermost secondaries and wing-coverts as scapulars.

Nestling (Plate 9).—Down on fore-head buff ; a black median line from base of upper mandible to centre of crown, another from above centre of eye encircling crown ; rest of crown pink-cinnamon, down tipped black-brown ; from upper mandible above eye and down nape a buff band ; a black line from lores through eye and down sides of nape ; centre of nape sooty-black, down tipped warm buff ; from nape almost to uropygial tuft a black median band ; a black line across wing, two lines on either side of back ; another along thighs ; a sooty-black patch above exposed tibia ; remaining upper-parts warm buff or pink-cinnamon, down mostly tipped black-brown ; upper-breast suffused buff ; remaining under-parts white.

Juvenile.—Like adult winter but crown sepia, feathers edged cinnamon-buff ; nape paler, feathers tipped light buff ; mantle and scapulars sepia, feathers edged and notched cinnamon-buff, scapulars notched black-brown ; sides of neck, lower-throat and breast light buff or white heavily streaked sepia ; tail-feathers barred white and sepia and more or less suffused buff, narrower and more pointed at tip than in adult ; wing as adult but innermost secondaries and median coverts as scapulars ; lesser coverts sepia, inner ones tipped white.

First winter.—As adult winter and only to be distinguished by worn buff edges and notches to retained juvenile median coverts (least abraded on innermost) and by juvenile tail-feathers. The juvenile body-feathers, not all scapulars, one or two central pairs and sometimes all tail-feathers, usually some innermost secondaries and coverts and some median and lesser coverts are moulted Aug. to Jan. but not rest of wings. *First summer*.—Apparently as adult but does not acquire so much summer-plumage. Distinguished by retained juvenile wing-coverts as in first winter.

Measurements and structure.—♂ wing 152–160 mm., tail 57–67, tarsus 45–50, bill from feathers 38.5–43 (12 measured). ♀ wing 156–162, bill 40–45.5. Primaries : 1st minute, 2nd longest, 3rd equal or 2–5 mm. shorter, 4th 5–10 shorter, 5th 13–20 shorter, 6th 23–30 shorter. Longest inner secondaries between 4th and 6th primaries. Bill straight and slender, groove in upper mandible about half or slightly more than half length of culmen. Other structure as in *T. flavipes*.

Soft parts.—Bill pink-horn, base of under mandible orange-yellow ; legs and feet (ad.) orange-red, (juv.) pale orange-yellow ; iris brown.



(4-5THS NATURAL SIZE.)

Nestlings in Down of: 1, The Dotterel (*Charadrius morinellus*). 2, The Golden Plover (*C. apricarius*). 3, The Common Sandpiper (*Tringa hypoleucos*). 4, The Common Redshank (*T. t. totanus*). 5, The Common Snipe (*Capella g. gallinago*). 6, The Woodcock (*Scolopax rusticola*).

[Face p. 626.]

CHARACTERS AND ALLIED FORMS.—For differences of *T. t. robusta* see under that form. *T. t. eurhinus* (Central and apparently E. Asia) in winter has under-parts less streaked, in summer upper-parts lighter and more plentifully margined pink-cinnamon. White back and rump, barred upper tail-coverts, more or less white secondaries distinguish Redshank in all plumages.

FIELD-CHARACTERS.—Breeding-places are deserted as soon as young can fly, but Redshank is a familiar shore-bird throughout year, frequenting rocky coasts, mud-flats and sandy shores indifferently. A noisy, restless creature, identified by slender build, long red legs (yellow in young), white rump and tail-coverts and large extent of white on wing in flight. Young birds are sometimes reported as Yellowshank, which has dark secondaries and barred, not white, axillaries. Call-note, a loud musical “tew, tew.” Love-song, begun in air as bird circles and soars above nesting place and finished on ground, is at first deliberate but gradually quickens. Farren renders it “dhu-lee dhu-lee du-lee du-le du-le dle-dle-dle-dle.” Alarm-note at breeding-places a yelping “teuk, teuk.”

BREEDING-HABITS.—Haunts meadow-land near rivers, marshes, moorlands, etc. *Nest*.—Hollow in tuft of dead grass, neatly lined with bents, sometimes quite exposed, but generally with grasses drawn together above over nest, and entrance at side. *Eggs*.—Normally 4, occasionally 5 (nests with 6 to 8 eggs are probably used by two hens), pyriform, pale ochreous to reddish-ochreous, very rarely greenish in ground, sometimes profusely spotted and blotched, sometimes sparingly marked with sienna to vandyke-brown and ashy-grey shellmarks. Average of 100 British eggs, 44.5×31.5 . Max. : 48×32 and 46.5×33.1 . Min. : 41.5×28.5 mm. *Breeding-season*.—From first half April in England but in Scotland often in early May. *Incubation*.—Apparently chiefly by hen but male has been killed from eggs (Cunningham). Period 23–25 days. Probably single brooded, late clutches being second or third layings.

FOOD.—Chiefly insects and their larvæ; coleoptera (*Hyphidrus*, *Onthophagus*, etc.); diptera (*Tipula*, etc.) and larvæ of *Ephemeridæ* and *Phryganeidæ*. Also mollusca (small marine univalves, and *Cardium*), crustacea (small crabs), worms (*Lumbrici*) and spiders. Small frogs also said to be taken.

DISTRIBUTION.—*British Isles*.—Summer-resident, to what extent migrant is uncertain, but some travel considerable distances from breeding haunts, e.g. Scotland to Ireland; passage-migrant and winter-visitor (mid-July to mid-Nov. and mid-March to end May). Breeds (increasing generally during recent years, especially inland) many suitable localities throughout, but sparsely Wales, Shetlands and O. Hebrides, not south coast Ireland. In autumn on all coasts but less numerous winter.

DISTRIBUTION.—*Abroad*.—Breeds throughout Europe generally and Mediterranean countries, and from Asia Minor to west Siberia.

Migrates in winter as far south as S. Africa. Represented by closely allied subspecies in Iceland, central and eastern Asia south to Kashmir, wintering in India to Celebes and Philippines.

413. *Tringa totanus robusta* (Schiöler).—THE ICELAND REDSHANK.

TOTANUS CALIDRIS ROBUSTUS Schiöler, Dansk Orn. Foren. Tidskr., XIII, p. 211 (1919—Iceland).

Tringa totanus robusta, A. C. Jackson, Brit. B., XIV, p. 280.

DESCRIPTION.—*Adult male and female.* *Winter.*—Coloration indistinguishable from Common Redshank and moult same. *Summer.*—Like Common Redshank but upper-parts darker and browner; under-parts more heavily spotted and broadly barred black-brown.

Juvenile and first winter.—Coloration indistinguishable from Common Redshank.

Measurements and structure.—♂ wing 157–171 mm., bill 36·5–43. ♀ wing 158–170, bill 38–45 (24 ♂ 15 ♀ measured, Iceland breeding birds, Schiöler *in litt.*). One first winter ♀ (15.10.13 near Inverness) had wing 175 mm. Structure as in Common Redshank, but bill and feet stronger and stouter.

BREEDING-HABITS.—Differ little from those of Common Redshank. Haunts marshy ground at low levels. *Nest.*—Hollow in ground in marsh, lined dry grasses, etc. *Eggs.*—Normally 4, occasionally 3 only. Small series examined appear rather lightly marked. Average size of 15 eggs, 44·6×31·2. Max.: 46×32·1. Min.: 43×31·5 and 46×30 mm. *Breeding-season.*—End May and early June. *Incubation.*—Apparently by female only. Single brooded.

DISTRIBUTION.—*British Isles.*—Probably regular autumn to spring migrant. Examples identified from east and west coasts Scotland, east coast England, north Wales and west Ireland Oct. to March (*ut supra*).

DISTRIBUTION.—*Abroad.*—Breeds Iceland and possibly Færoes. Partial migrant, doubtless down western shores of Europe, one specimen Morocco. Probably this form which has been recorded as Redshank from Greenland.

TRINGA ERYTHROPUS

414. *Tringa erythropus* (Pall.)—THE SPOTTED REDSHANK.

SCOLOPAX ERYTHROPUS Pallas, Vroeg's Cat. Coll., Adumbratiuncula, p. 6 (1764—Holland).

Scolopax Maculata Tunstall, Orn. Brit., p. 3 (1771—Great Britain. Ex Zool. Brit.).

Scolopax Cantabrigiensis Latham, Gen. Synops., Suppl., p. 292 (1787—Ex "Cambridge Godwit," Gen. Synops., III, i, p. 146).

Totanus fuscus (Linnæus), Yarrell, III, p. 474; Saunders, p. 617.

DESCRIPTION.—*Adult male and female.* *Winter.*—Crown ash-brown; nape, mantle and scapulars ash-brown, feathers faintly tipped white, most scapulars notched black-brown and white; back and rump white; upper tail-coverts white closely barred black-brown; broad

white eye-stripe more or less streaked ash-brown ; loral streak ash-brown ; ear-coverts white streaked ash-brown ; sides of neck ash-brown, feathers narrowly tipped white ; cheeks white spotted dusky ; lower-throat and upper-breast white, feathers more or less streaked or marked dusky and suffused palest ashy towards tip ; sides of breast as mantle but paler ; flanks white or suffused ash-brown and irregularly barred and marked same ; under tail-coverts white, lateral ones with dusky-brown shafts and irregularly marked black-brown ; rest of under-parts white ; tail-feathers ash-brown narrowly edged white, with incomplete bars or notches of black-brown and white ; primaries sepia, inner webs paler and with an irregular white streak freckled sepia towards base, inner ones edged white and more or less notched black-brown on outer webs ; secondaries pale sepia or ash-brown, edged and notched white ; innermost secondaries and coverts as scapulars ; primary-coverts sepia, inner ones narrowly edged white ; greater coverts as secondaries but inner ones irregularly barred sepia ; rest of wing-coverts ash-brown broadly tipped white, median coverts barred sepia subterminally and more or less irregularly notched sepia and white. This plumage is acquired by complete moult Aug. to Jan. *Summer*.—The body-feathers (not all scapulars), usually all tail-feathers, or central pair only, most innermost secondaries and coverts, some median and lesser coverts but not rest of wings are moulted March to May. Sometimes some winter-feathers are retained. Crown and nape sooty-black, feathers narrowly tipped white ; feathers of mantle and scapulars sooty-black, narrowly tipped white and notched white or pale pink-buff (sometimes black broadly tipped and notched ash-brown, some scapulars sometimes more or less ash-brown barred black-brown) ; rest of upper-parts as winter but some tail-coverts black, tipped and irregularly barred white or pale pink-buff ; cheeks, ear-coverts, sides of neck, chin, throat, upper-breast and flanks slate-black, feathers narrowly edged white and flanks usually more or less irregularly barred same (sometimes some flank-feathers white barred slate-black ; feathers of cheeks and chin sometimes with ill-concealed white bases) ; belly and vent slate-black, feathers more or less tipped white and often with imperfectly concealed white bases, sometimes intermixed with white feathers ; under tail-coverts barred slate-black and white and edged white ; tail-feathers as winter but central pair notched pale pink-buff ; wing as winter but new innermost secondaries and coverts and new median coverts as scapulars ; new lesser coverts black narrowly edged white.

Nestling.—Like nestling Common Redshank but pink-cinnamon of upper-parts replaced by greyish-white more or less suffused light-buff ; markings of upper-parts brown-black ; under-parts greyish-white suffused buff ; down of upper-breast with ill-concealed sooty-black bases.

Juvenile.—Like adult winter but crown sepia, feathers faintly notched white ; nape same but lighter ; mantle and scapulars sepia or black-brown, feathers notched and tipped white ; upper

tail-coverts more closely barred ; ear-coverts, cheeks, sides of neck and lower-throat white, narrowly streaked and spotted sepia ; breast, belly and vent white with irregular sepia bars and markings, paler on belly and vent ; flanks and under tail-coverts white broadly barred sepia ; tail-feathers sepia narrowly barred white, central pair sometimes pale sepia barred darker and notched white (feathers narrower and more pointed than in adult) ; wing as adult but innermost secondaries and coverts as scapulars ; greater coverts darker sepia ; median coverts sepia notched and edged light buff or white ; lesser coverts sepia edged, and some notched, white.

First winter.—As adult winter and only to be distinguished by retained worn juvenile greater and median coverts, innermost median with much narrower white tips than adult and by worn juvenile tail-feathers. The juvenile body-feathers, some tail-feathers, usually all innermost secondaries and coverts, some median and lesser coverts are moulted Aug. to Feb. but not rest of wings. *First summer*.—Moult as in adult. Like adult and only to be distinguished by retained juvenile tail-feathers when not all moulted and wing-coverts.

Measurements and structure.—♂ wing 158–167.5 mm., tail 60–67.5, tarsus 52.5–59, bill from feathers 53–59 (12 measured). ♀ wing 166–177, bill 56.5–64. Primaries : 1st minute, 2nd longest, 3rd 2–5 mm. shorter, 4th 9–13 shorter, 5th 16–24 shorter, 6th 26–34 shorter. Longest inner secondaries between 3rd and 6th primaries. Bill moderately long, slender and straight, groove in upper mandible extending to one-third length of culmen. Legs long. Other structures as in *T. flavipes*.

Soft parts.—Bill dark brown, dusky-red at base of lower mandible ; legs and feet orange-red ; iris brown.

CHARACTERS.—No subspecies. Pale sepia secondaries, notched and tipped white, white back and rump and barred tail-coverts distinguish this species in all plumages.

FIELD-CHARACTERS.—In summer plumage, sooty black faintly spotted with white, is quite unlike Common Redshank. Ashy-grey winter dress is less distinct, but at all seasons larger size, relatively longer bill, and dull tint and small amount of white in expanded wing distinguish it. Call-note “tchuet, tchuet,” too, is unlike musical call of smaller species.

BREEDING-HABITS.—Haunts dry moorlands, partially wooded. *Nest*.—Often on recently burnt patch of moor with trees at hand, mere depression in ground, with a few pine needles for lining. *Eggs*.—Normally 4, pyriform, ground-colour usually sea-green, but sometimes ranging to stone-buff, boldly blotched with rich umber-brown and ashy-grey. Average of 100 eggs, 47.2×32.2 . Max. : 51.5×33 and 48×34 . Min. : 42×32.5 and 50×30 mm. *Breeding-season*.—End May and first half June in Lapland. *Incubation*.—Chiefly by male (S. A. Davies). Period unknown. Single brooded.

FOOD.—Insects and their larvæ, chiefly aquatic, such as *Notonecta glauca* and *Naucoris cimicoides*, as well as various species of water-beetles; freshwater mollusca, chiefly small univalves, worms, small crustacea (shrimps); tadpoles and small frogs as well as newts (*Triton cristatus*) and small fish. Also fragments of *Potamogeton*.

DISTRIBUTION.—*British Isles*.—Uncommon passage-migrant (late April–June and Aug.–Oct., exceptional winter). Chiefly Kent to Yorks., occasional south, and rare west coasts England and inland, very rare Scotland (about twenty-five times, mostly in south-west) and in Ireland (twenty or more times, chiefly in Moy estuary (Mayo and Sligo)).

DISTRIBUTION.—*Abroad*.—Breeds in arctic Europe and Asia, winters in Mediterranean countries and Africa, mostly north of Equator (one record S. Africa), India, Burmah, Japan and China.

TRINGA NEBULARIA

415. *Tringa nebularia* (Gunner.)—THE GREENSHANK.

SCOLOPAX NEBULARIA Gunnerus, Leem, Beskr. Finm. Lapp., p. 251 (1767—Norway).

Scolopax Cineracea Latham, Gen. Synops., Suppl., p. 292 (1787—Ex Gen. Synops., III, i, p. 145, and Pennant, Brit. Zool., II, no. 180, pl. LXVI. Spalding in Lincolnshire).

Scolopax canescens Gmelin, Syst. Nat., I, II, p. 668 (1789—Lincolnshire. Ex Pennant, l.c.).

Totanus canescens (Gmelin), Yarrell, III, p. 483; Saunders, p. 619.

(*Totanus glottis* of many authors, but Linnaeus's name *glottis* being more than doubtful we do not adopt it.)

DESCRIPTION.—*Adult male and female*. *Winter*.—Fore-head white, sometimes spotted sepia; crown streaked sepia or ash-brown, feathers edged white; nape same but streaks paler; mantle and scapulars ash-brown, feathers with sepia shafts and fringed white and more or less bordered, shaded or notched sepia; back and rump white, sometimes some feathers of back streaked sepia; upper tail-coverts white, long ones barred or irregularly marked ash-brown; eye-stripe white; loreal streak sepia, feathers edged white (ill-defined in some); cheeks, ear-coverts and sides of neck white finely streaked ash-brown; sides of breast white, feathers with sepia shaft-streaks and irregular markings and frecklings; remaining under-parts white; axillaries and under wing-coverts irregularly barred and marked sepia, axillaries often more or less white; central pair tail-feathers white, broadly and irregularly barred or more or less freckled ash-brown, in others central pair pale drab-grey barred or mottled ash-brown, remainder white more or less barred, marked or mottled sepia or ash-brown (varying considerably individually); primaries black-brown paler on inner webs, inner ones (sometimes all) more or less mottled white and sepia on inner webs, and faintly tipped white; secondaries ash-brown narrowly bordered white, inner webs more or less ashy-white, irregularly mottled or barred ash-brown; innermost and coverts as scapulars; primary-coverts

black-brown ; greater and median coverts ash-brown, tipped white, usually with a subterminal sepia shading (sometimes notched sepia) ; lesser coverts sepia mostly narrowly edged white. This plumage is acquired by complete moult June to Jan. *Summer*.—The body-feathers, usually some or all tail-feathers, some innermost secondaries and coverts, usually some median and lesser coverts are moulted Jan. to May but not rest of wings ; some body-feathers are often retained. Like winter but fore-head and crown heavily streaked sepia or black-brown, feathers edged white ; nape same but streaks narrower ; mantle and scapulars black-brown or sepia, feathers edged and notched white or ash-brown, intermixed with ash-brown feathers streaked, shaded or mottled black-brown and tipped white, scapulars mostly irregularly notched or barred sepia ; lores, sides of face and neck white, narrowly streaked black-brown ; under-parts white, chin and throat slightly, and lower-throat and breast heavily, spotted black-brown, flanks irregularly barred and marked sepia ; tail and wing as winter but innermost secondaries and coverts as scapulars, new median coverts as mantle.

Nestling.—Like nestling Common Redshank but pink-cinnamon of upper-parts replaced by greyish-white, suffused light buff on mantle, back and rump ; line through eye sometimes interrupted in front of eye ; sides of face and neck and fore-neck greyish-white, down with sooty-brown bases ; remaining under-parts white.

Juvenile.—Like adult winter but feathers of fore-head, crown and nape streaked sepia and edged white or light buff ; mantle and scapulars sepia edged and irregularly marked buff ; lower scapulars ash-brown with sepia shafts and notches and edged light buff ; upper tail-coverts white mostly with faint terminal dusky lines, some irregularly marked sepia ; cheeks and sides of neck heavily streaked sepia ; lower-throat and breast white, feathers mostly with triangular shaped sepia spots giving a streaked appearance most pronounced at sides, some with faint terminal dusky tips ; flanks slightly marked or tipped dusky ; tail-feathers more or less edged buff and tips more pointed ; wing as adult but most primaries tipped buff or white ; innermost secondaries and coverts pale sepia or ash-brown edged buff, sometimes barred or notched sepia ; median coverts sepia edged buff, edges incomplete on innermost ; lesser coverts darker, some faintly edged buff.

First winter.—As adult winter and only to be distinguished by worn and faded juvenile wing-coverts, (innermost median coverts with incomplete or narrow buff or white tips, not broadly tipped white as adult), and by worn juvenile tail-feathers. The juvenile body-feathers, some or all tail-feathers, some innermost secondaries and coverts, some median and lesser coverts are moulted Aug. to March but not rest of wings. *First summer*.—No certain examples examined. Some spring birds in worn first winter plumage are moulting into plumage as winter.

Measurements and structure.—♂ wing 184–194 mm., tail 68–80, tarsus 55–61, bill from feathers 50–56 (12 measured). ♀ wing 184–

200, bill 53-59. Primaries : 1st minute, 2nd longest, 3rd 4-6 mm. shorter, 4th 11-15 shorter, 5th 22-26 shorter, 6th 33-39 shorter. Longest inner secondary between 4th and 7th primaries. Tail square, slightly rounded, central pair longest. Bill of medium length and distinctly upturned ; culmen stout with groove extending less than half length. Other structure as in *T. flavipes*.

Soft parts.—Bill bluish-slate, tip horn ; legs and feet pale olive-green ; iris brown.

CHARACTERS.—No subspecies. Distinguished from near allies by slightly upturned bill and white back, rump and upper tail-coverts.

FIELD-CHARACTERS.—Outside breeding-quarters, a passage-migrant, a few wintering. Occurs, often singly, on coastal marshes, lakes and reservoirs. Recognized by hoary upper-parts—greyest in autumn and winter—long, black and slightly recurved bill, and long, greenish legs. In flight, which is rapid and erratic, wings uniformly coloured, but lower-back, rump and tail conspicuously white. Does not probe mud but snatches food after short rushes in shallow water. Love-song similar to Redshank's. Note on rising a loud "tchew, tchew, tchew," less musical than Redshank's "tew, tew tew." Call of passing birds a loud "chee-weet."

BREEDING-HABITS.—Found on open moorlands interspersed with flows and also in open patches near pine forest. *Nest*.—Always close to some mark, either a stone on open moor, or fragment of bleached timber near woodland ; a depression in ground lined with a few bents and leaves of moorland plants. *Eggs*.—Usually 4, sometimes 3 only, rarely 5, pyriform, with warm stone-buff ground and numerous irregular markings of red-brown or chocolate and ashy shellmarks. Average of 100 British eggs, 51.4×34.8 . Max. : 59.8×37.7 . Min. : 45.8×35.4 and 50.4×32.4 mm. *Breeding-season*.—From mid-May as a rule, occasionally 1st week May, in Scotland. *Incubation*.—Collett ascribes this to male bird, but reliable information is scanty. Period unknown. Single brooded.

FOOD.—Includes insects and larvæ ; coleoptera (*Phyllopertha*, *Cneorhinus*, *Harpalus*, *Dytiscus*, *Gyrinus*, *Aphodius*, *Ilybius*, etc.) ; diptera (*Tipula*) ; also *Notonecta glauca* and *Lestes nympha*. Also crustacea (*Palæmon*, *Hippolyte*, *Squilla*, sandhoppers and minute crabs), lob-worms, mollusca (*Planorbis*, etc.), tadpoles and young frogs, small fish and fish spawn.

DISTRIBUTION.—*British Isles*.—Resident. Breeds Scotland from Rannoch Moor (Perth) northwards on mainland, and most commonly Inverness, eastern Ross, Caithness, and Sutherland ; in Lewis and Harris (O. Hebrides), rarely in Skye, possibly in Tiree, not in Orkneys, but possibly on a few occasions in Shetlands. Elsewhere passage-migrant throughout British coasts and occasionally inland, chiefly autumn (mid-July to late Nov.), and more rarely spring (mid-April to late May), and only occasionally winter.

DISTRIBUTION.—*Abroad*.—Summers in northern regions of Europe and Asia, from Scandinavian Mts. to Kamtschatka, passes on

migration through temperate Europe and Asia, and winters in Africa and tropical Asia, Malay Archipelago, and Australia, Tasmania, and New Zealand. Accidental in Canaries, Madeira, and Azores, and America.

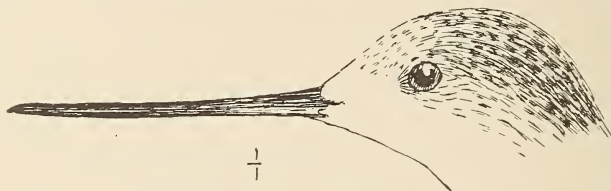
TRINGA STAGNATILIS

416. *Tringa stagnatilis* (Bechst.)—THE MARSH-SANDPIPER.

TOTANUS STAGNATILIS Bechstein, Orn. Taschenb., II, p. 292, pl. (1803—Germany).

T. stagnatilis, Saunders, p. 620 (text); M. J. Nicoll, Brit. B., III, p. 356.

DESCRIPTION.—*Adult male and female.* *Winter.*—Like Greenshank but crown ash-brown, feathers edged white, some feathers with sepia spots; mantle and scapulars, with fewer sepia streaks and notches and with narrower white edges; loreal streak absent; eye-



The Marsh-Sandpiper (*Tringa stagnatilis*).

stripe and lores white; axillaries and under wing-coverts white; tail and wings as Greenshank but innermost secondaries and coverts, as scapulars, usually bordered, or more plentifully spotted sepia (sometimes with one or two irregular sepia barrings); greater and median coverts ash-brown narrowly tipped white and with sepia shafts. This plumage is acquired by complete moult Aug. to Dec. *Summer.*—Moult as in Greenshank. Like Greenshank but fore-head and crown white or light drab (sometimes tinged pink-buff), heavily spotted sepia; mantle and scapulars light drab (sometimes tinged pale pink-buff), feathers faintly edged white, those of mantle with large irregular black-brown centres, and scapulars more or less barred same; under-parts as Greenshank but streaks narrower and spots smaller; under tail-coverts usually with sepia shaft-streaks and a few irregular bars; innermost secondaries and coverts, new median and lesser coverts as scapulars but shaft-streaks and bars broader.

Nestling and Juvenile.—(Not examined.)

First winter.—As adult winter and only to be distinguished by worn and faded sepia wing-coverts and by light buff or white edges (incomplete on innermost) to median coverts when not too abraded. The juvenile body-feathers, tail (apparently sometimes central pair only), some innermost secondaries and coverts, some median and a few lesser coverts are moulted from autumn to Feb. *First summer.*—Apparently as adult summer and only to be distinguished when buff edges to wing-coverts are not too abraded.

Measurements and structure.—♂ wing 132–139 mm., tail 53–58, tarsus 47–52, bill from feathers 37–40 (12 measured). ♀ wing 133.5–143, bill 40–45. Primaries: 1st minute, 2nd longest, 3rd about equal or 2–5 mm. shorter, 4th 6–10 shorter, 5th 14–18 shorter, 6th 22–28 shorter. Longest inner secondary between 4th and 6th primaries. Tail slightly rounded, central pair longest. Bill moderately long, straight and slender; groove in upper mandible about one-third length of culmen. Other structure as in *T. flavipes*.

Soft parts.—Bill dark brown, green at base; legs and feet dusky-olive; iris dark brown.

CHARACTERS.—No subspecies recognized. More slender bill, white back and rump and more or less white upper tail-coverts, distinguish Marsh-Sandpiper from its near allies other than Greenshank.

BREEDING-HABITS.—Breeds on dry grassy flats near marshes or lakes. *Nest.*—Depression in ground among grass, lined with dry bents. *Eggs.*—Normally 4, quite exceptionally 5, pyriform, creamy-buff or stone-colour in ground-colour, blotched and spotted with dark purplish-brown and ashy-grey, sometimes sparingly and sometimes freely. Average of 34 eggs, 38.5×27 . Max.: 41×26 and 40.6×28.3 . Min.: 35.2×26.5 and 38.5×25.7 mm. *Breeding-season.*—From May 3 to end month in Hungary. *Incubation.*—Male and female have been shot from eggs. Period not known. Single brooded.

FOOD.—Very little definitely recorded. Chiefly aquatic insects and larvæ (water-beetles and diptera). Also small freshwater univalve mollusca.

DISTRIBUTION.—*England.*—Six. One Tring (Herts.), Oct., 1887 (*cf. Vict. Hist. Bucks.*, I, p. 150; *Brit. B.*, III, p. 365 (footnote) and Saunders, p. 620). Pair Rye Harbour (Sussex), female June 16 and male June 18, 1909 (M. J. Nicoll, *Brit. B.*, III, p. 356). Female Bodiam Marsh (Sussex), July 1, 1910 (J. B. Nichols, *op.c.*, v, p. 49). Pair Romney Marsh (Kent) May 24, 1915 (H. W. Ford-Lindsay, *op.c.*, IX, p. 69).

DISTRIBUTION.—*Abroad.*—Breeds in Siberia and Turkestan, throughout south Russia and south-east Europe in suitable localities, and possibly in south France. Migrates to Africa, India, Indo-Chinese countries, and eastern Archipelago south to Australia. Casual north as far as E. Prussia and Heligoland.

TRINGA INCANA

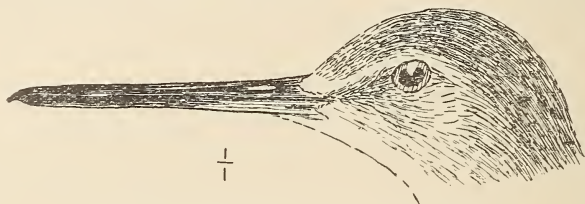
417. *Tringa incana brevipes* (Vieill.)—THE GREY-RUMPED SANDPIPER.

TOTANUS BREVIPES Vieillot, *Nouv. Dict. d'Hist. Nat.*, VI, p. 410 (1816—"Locality unknown." Type collected in Timor by Maugé, according to Pucheran, *Rev. & Mag. Zool.*, 1851, p. 570).

Tringa incana brevipes, H. W. Ford-Lindsay, *Brit. B.*, IX, p. 205.

DESCRIPTION.—*Adult male and female.* *Winter.*—Feathers at base of upper mandible white; upper-parts dark ash-grey, feathers

mostly with lighter edges, those of back, rump and upper tail-coverts tipped ashy-white, tail-coverts mostly with a subterminal darker grey border; white eye-stripe from lores to behind eye, where more or less streaked ash-grey; loreal streak and sides of neck dark ash-grey; ear-coverts and cheeks whitish, narrowly streaked dark ash-grey; chin and throat white; breast white more or less suffused pale ash-grey; sides of breast and flanks more



The Grey-rumped Sandpiper (*Tringa incana brevipes*).

or less uniform dark ash-grey, intermixed with some white; axillaries and under wing-coverts dark ash-grey tipped white; remaining under-parts white; tail-feathers dark ash-grey faintly bordered white; primaries black-brown or sepia, paler on inner webs, inner ones faintly tipped white; secondaries dark ash-grey faintly bordered white and more or less white towards base of inner webs as are inner primaries; innermost secondaries and coverts as long scapulars; primary-coverts black-brown or sepia, inner ones narrowly edged white; wing-coverts as mantle but greater coverts edged light buff or white. This plumage is acquired by complete moult July to Jan. *Summer*.—The body-feathers, not all scapulars, tail, some innermost secondaries and coverts, some median and lesser coverts are moulted Feb. to May but not rest of wings. Upper-parts as winter but feathers narrowly edged light buff or white, upper tail-coverts irregularly barred white; sides of neck white narrowly streaked ash-grey; breast white, feathers with irregular wavy bars of dark ash-grey, sides of breast as upper-parts but often barred buff or white; sides of belly and flanks white more or less barred dark ash-grey and intermixed with white feathers; remaining under-parts as winter; tail and wing as winter but innermost secondaries and coverts and new wing-coverts tipped light buff or white.

Juvenile.—Like adult winter but feathers of upper-parts notched light buff or white, some feathers of mantle and scapulars notched darker grey as well, upper tail-coverts tipped and irregularly barred light buff or white; cheeks light buff or white narrowly streaked or spotted dusky; upper-breast suffused dark ash-grey, feathers usually indistinctly spotted and freckled dusky and faintly tipped buff; sides of neck and sides of body as adult but feathers marked, notched, or faintly tipped light buff or white; flanks white more or less suffused pale ash-grey and irregularly barred same; rest of body-plumage as adult winter; tail-feathers as adult winter but tipped light buff or white, central ones usually with notches or

incomplete bars of same ; wing as adult but innermost secondaries and coverts as scapulars (notches confined to outer webs), median coverts as mantle but tipped light buff or white, sometimes with subterminal darker grey markings ; lower lesser coverts faintly edged light buff or white.

First winter.—As adult and only to be distinguished by worn light buff or white tips or faded brownish-grey juvenile median and lesser coverts and by juvenile tail-feathers when not moulted. The juvenile body-feathers, one or two central pairs of tail-feathers (sometimes not any tail-feathers), some innermost secondaries and coverts, some median and lesser coverts are moulted Sept. to Jan. but not rest of wings. *First summer*.—As adult and only to be distinguished from adult when edges of juvenile wing-coverts are not too much abraded. Moult as in adult. N.B.—Some birds miss the spring moult into breeding-plumage and during the summer moult into winter-plumage.

Measurements and structure.—♂ wing 156–169 mm., tail 63–70, tarsus 30–35, bill from feathers 35–40 (12 measured). ♀ wing 162–171.5, bill 36–42. Primaries : 1st minute, 2nd longest, 3rd 3–7 mm. shorter, 4th 9–16 shorter, 5th 20–26 shorter, 6th 30–36 shorter ; 3rd to 6th slightly emarginated on outer webs. Longest inner secondary between 5th and 7th primaries. Tail of medium length and rounded. Bill short, stout and straight, nasal groove about half length of culmen. Other structure, except tarsus which is shorter and stronger, as in *T. flavipes*.

Soft parts.—Bill (ad.) black-brown, base of lower mandible yellow-ochre, (juv.) dark brownish-slate ; legs and feet yellow-ochre ; iris brown.

CHARACTERS AND ALLIED FORMS.—*T. i. incana* (America) is larger, upper-parts in all plumages darker, under-parts in summer uniformly barred, and other differences. Uniform mouse-grey back, rump and upper tail-coverts, grey axillaries and under wing-coverts distinguish species.

BREEDING-HABITS.—Unknown.

FOOD.—Mainly a coast haunting species but exact details unknown.

DISTRIBUTION.—*England*.—Two. Male and female, Rye Harbour (Sussex), Sept. 23rd and 27th, 1914 (*ut supra*).

DISTRIBUTION.—*Abroad*.—Probably breeds in eastern Siberia and Kamtschatka, ranging through Sakhalin, Kuriles, Japan, China, Riu-Kiu Isles, Malay Archipelago to some Pacific Islands, New Guinea and Australia. Replaced in America by an allied race which winters in Mexico and Oceania.

Genus PHALAROPUS Briss.

PHALAROPUS Brisson, Orn., I, p. 50 (1760—Type by tautonymy "*Phalaropus*," i.e. *Tringa fulicaria* L., 1758, according to VI, p. 12).

Differs from other *Limicolæ* by the lobed feet, reminding one of those of *Podiceps* and *Fulica*, toes having lateral membranes

with festoon-like emarginations. Hind toe present. Otherwise much like *Calidris*, but plumage much closer, thicker, furry. Tail strongly rounded, middle rectrices a little elongated. Bill of British species somewhat different, therefore by certain authors placed in two genera, *Phalaropus* and *Lobipes*. Female brighter coloured and larger, male alone incubating and caring for young. Habits aquatic, mostly seen swimming, often miles out at sea. Migratory. 3 species, all in arctic and subarctic latitudes, two Palearctic (circumpolar), one (also sometimes placed in separate genus, *Steganopus*) only arctic America.

PHALAROPUS FULICARIUS

418. *Phalaropus fulicarius* (L.)—THE GREY PHALAROPE.

TRINGA FULICARIA Linnæus, Syst. Nat., ed. x, i, p. 148 (1758—"America.")

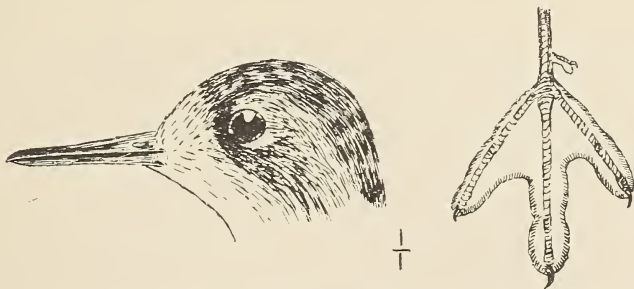
Typical locality: Hudson Bay. Ex Edwards).

Phalaropus fulicarius (Linnæus), Yarrell, III, p. 310; Saunders, p. 565.

DESCRIPTION.—*Adult male and female. Winter.*—Fore-head white; crown same, feathers with imperfectly concealed ash-brown bases; blackish-grey patch on hinder crown; nape white, centre dark grey; sides of back and rump and lateral upper tail-coverts white, latter mostly irregularly streaked grey; remaining upper-parts blue-grey, feathers with darker shafts and narrowly tipped white; lower scapulars deep mouse-grey bordered white; a small blackish-grey patch in front of eye continued below eye almost to nape; rest of face white; sides of breast blue-grey, feathers tipped white; flanks white, some with outer webs more or less pale grey, or irregularly marked same; under tail-coverts white, sometimes marked pale grey, two long central ones blue-grey tipped white; rest of under-parts white; tail-feathers mouse-grey with a blue-grey bloom and narrowly edged white; primaries deep mouse-grey, inner webs paler shading to white, outer webs mostly bordered white towards base; secondaries deep mouse-grey with white bases and tips and inner webs more or less white, 9th and 10th white, in some streaked centrally pale grey; innermost secondaries and coverts as long scapulars; wing-coverts deep mouse-grey, median and lesser with blue-grey bloom, inner primary, greater and median tipped white, greater broadly so. This plumage is acquired by complete moult July to Dec. *Summer.—Female.*—The body-feathers (not all scapulars), tail, innermost secondaries and coverts (apparently some median and lesser coverts but none actually found in quill) but not wings are moulted March to May. Crown dark sepia or brown-black; centre of nape bluish mouse-grey, some feathers faintly tipped auburn; on sides of face surrounding eye a large white patch; sides of nape auburn; feathers of mantle and scapulars brown-black, tipped and more or less broadly margined cinnamon-buff and pink-buff fading to pale buff as season advances; back and rump as

winter ; lateral upper tail-coverts orange-cinnamon, central pink-buff with broad central streaks of black-brown ; lores and chin sooty-black, feathers with white bases ; sides of neck auburn shading into chestnut-brown ; remaining under-parts chestnut-brown ; axillaries and under wing-coverts as winter ; central tail-feathers sepia edged pink-buff, remainder pale sepia or mouse-grey, sometimes with irregular marks of pink-buff or orange-cinnamon towards tip ; wing as winter but innermost secondaries and coverts sepia or black-brown, outer webs with cinnamon-buff or pink-buff borders. *Male*.—Like female but feathers of crown bordered at sides cinnamon-buff giving a streaked appearance ; feathers of nape dusky-brown, edged pink-buff, those of mantle and scapulars more deeply bordered and tipped pink-buff and cinnamon-buff ; lores dusky, some feathers tipped auburn ; chin dusky-black more or less intermixed white ; white patch round eye much smaller and in some confined to eye-stripe ; remaining under-parts as female but more or less intermixed with white feathers, some suffused chestnut-brown at tip ; tail-feathers as female but outer ones without buff markings. Moults as in female.

Nestling.—A narrow black-brown line at base of bill ; forehead cinnamon-buff ; crown velvety-black intermixed with cinnamon-buff and bordered on either side by a yellowish-white eye-stripe, down with black-brown tips ; sides of nape cinnamon-buff, down with sooty-black tips ; centre sooty-black, down tipped yellow ; band down centre of back, irregular one along side of rump, patch



Head of juvenile and foot of the Grey Phalarope (*Phalaropus fulicarius*).

across ulnar and irregular patch along femoral tract velvety-black ; patch on side of tibia sooty-black ; rest of upper-parts and sides of body variegated with blackish, cinnamon-buff and buffish-white ; across lores to eye a narrow black-brown line ; blackish patch on ear-coverts ; cheeks, sides of neck, chin and throat and inner side of tibia yellowish-white, down sooty-black at base and tipped same ; remaining under-parts greyish-white, down sooty-black at base.

Juvenile. Male and female.—Upper-parts resemble adult male in summer but fore-head light buff or white ; crown sooty-black, feathers edged pink- or cinnamon-buff ; feathers of centre of nape with sooty-black or dusky tips faintly edged cinnamon-buff ; sides of nape vinaceous-buff ; feathers of mantle and scapulars black, edged at sides warm or cinnamon-buff ; back and rump as adult but feathers notched at sides warm or cinnamon-buff, upper tail-coverts mouse-grey similarly edged ; lateral ones more or less white sometimes suffused buff ; eye-stripe, lores, cheeks, chin and throat white more or less suffused pale vinaceous-buff ; sooty-black line below eye across ear-coverts ; fore-neck, sides of breast and flanks vinaceous-buff, feathers of breast and flanks with faint terminal markings, some with central streaks of dusky ; remaining under-parts white but tail-coverts in some suffused vinaceous-buff or hair-brown ; tail-feathers hair-brown or mouse-grey, narrower and more pointed at tip than in adult, central ones black-brown, all usually narrowly bordered white or buff ; wing as adult but innermost secondaries and coverts as mantle, median coverts hair-brown or black-brown edged pinkish cinnamon-buff or white, lesser coverts hair-brown faintly edged greyish-white.

First winter.—As adult but distinguished by juvenile tail and wing-coverts. Apparently most body-feathers but not tail or wings are moulted in autumn but very few birds examined. *First summer.*—As adult summer and only to be distinguished when juvenile coverts, especially innermost median, are not too abraded. The body-feathers, tail, some innermost secondaries and coverts, some median and lesser coverts are moulted in spring but not rest of wings.

Soft parts.—(Summer ♂). Bill orange at base, tip horn-coloured ; legs and feet horn-coloured ; webs yellow ; iris dark.

Measurements and structure.—♂ wing 126–135 mm., tail 56–61, tarsus 20–22, bill from feathers 20–23 (12 measured). ♀ wing 130.5–141, bill 23–25. Primaries : 1st minute, 2nd longest, 3rd 2–4.5 mm. shorter, 4th 7–10 shorter, 5th 15–18 shorter, 6th 23–28 shorter. Longest inner secondary between 3rd and 5th primaries. Tail much rounded, under tail-coverts long, often projecting beyond tail. Bill short, straight, broad and flattened, narrowing suddenly to tip which is pointed, culmen decurved at tip. Nostrils basal, nasal groove extending nearly to tip of upper mandible. Legs short, tibia only slightly exposed, tarsus laterally compressed, scutellated in front and behind. Foot with 4 toes, outer and middle toes webbed almost to 2nd joint, inner and middle ones to about 1st joint ; anterior toes margined with a lobed lateral membrane, hind toe small and lobed. Plumage compact, down dense and luxuriant.

CHARACTERS.—No subspecies. Short, broad, flattened bill and partially webbed feet, anterior toes with a lobed lateral membrane distinguish this species.

FIELD-CHARACTERS.—Their extreme confidence ensures observation of Phalaropes at close quarters. They spend much of their time on the water, where, owing to their buoyancy, they look like miniature Gulls, but swim with bobbing action of Moorhen and frequently dip their bills in the water. In breeding dress the Grey is distinguished by its yellow bill, reddish-chestnut under-parts and brownish back striated with buff and chestnut. The winter plumages are less distinct, but the Grey is larger and has a shorter and broader bill. Its irregular appearances in Britain are mostly on migration in autumn when it is seen oftenest on coast, less frequently and as a rule singly on lakes and even on small ponds inland. When in flocks the birds are said to twitter continually. Alarm-note at nesting-grounds is described by Miss Haviland as a shrill “ drrrt, drrrt.”

BREEDING-HABITS.—Breeds on islands in fjords, broken ground in neighbourhood of swampy pools, and near coast *Nest*.—In high north, merely a deep cup in moss or shingle, often sheltered by an outcrop of stone, but in sheltered localities and in grass-covered islands of Siberia, substantial nest of grass is made in a tussock in marshy ground. *Eggs*.—Usually 4, but at times 3 only, while 6 have been found in one nest, pyriform (or ovate at times) blotched and spotted with black-brown and a few ashy spots on stone-colour to olive-brown ground. Average of 155 eggs, 30.4×21.8 . Max. : 33.8×21.2 and 30.5×24.5 . Min. : 27.5×20.6 and 28.5×20.5 mm. (Spitsbergen and Iceland). *Breeding-season*.—End June and early July in Spitsbergen ; July in Siberia. *Incubation*.—By male only. Period 14–16 days (Hantzsch). Single brooded.

FOOD.—Insects and their larvæ (diptera, coleoptera, etc.) ; small mollusca (*Rissoa*, *Paludestrina*, etc.) ; crustacea (*Idotea*, *Gammarus* and small shrimps), small sandworms, leeches, Acaridæ, etc. Vegetable matter is also taken, chiefly algæ, and occasionally bits of moss. Le Roi regards crustacea as main food and mollusca as secondary.

DISTRIBUTION.—*British Isles*.—Passage-migrant (early Sept.–early Nov.). Scarce and irregular all coasts (most regular south-west England) autumn, rare winter and spring. Occasional inland. Periodically (after heavy south-west gales) in numbers, as autumns 1866, 1869 and 1886 in south England and autumn 1891 in many parts. Rare vagrant Hebrides, Orkneys and Shetlands.

DISTRIBUTION.—*Abroad*.—Breeds in arctic regions of Old and New Worlds (in Europe south to Iceland (very local), Spitsbergen and Novaya Zemlia), migrating in winter south to Falkland and Juan Fernandez Islands, Chile and Patagonia ; in east to China, once Kauai, once New Zealand. In Europe in winter found on many inland waters and along coasts of Mediterranean, also in north Africa and Madeira and Azores. Spitsbergen birds have been separated as *P. f. jourdaini*, but require further study.

PHALAROPUS LOBATUS

419. *Phalaropus lobatus* (L.) — THE RED-NECKED PHALAROPE.

TRINGA TOBATA (evident misprint for *lobata*, corrected p. 824) Linnaeus, Syst. Nat., ed. x, i, p. 148 (1758—N. America and Lapland. Restricted typical locality: Hudson Bay, from first and only quotation).

Phalaropus Williamsii Simmonds, Trans. Linnean Soc., London, VIII p. 264 (1807—Orkney Is.).

Tringa rubra Anonymous, Arcana, pl. (50) (1811—In winter near Stockport, England).

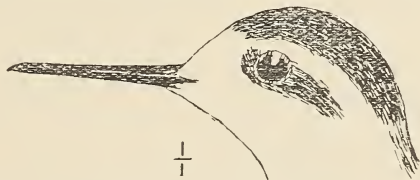
Phalaropus hyperboreus (Linnaeus), Yarrell, III, p. 315; Saunders, p. 567.

DESCRIPTION.—*Adult male and female. Winter.*—Fore-head and crown white, feathers with ash-brown bases often imperfectly concealed; patch on hinder crown and centre of nape dull blue-grey with a brownish tinge; sides of nape, back and rump white; lateral upper tail-coverts white streaked or shaded grey; remaining upper-parts dull blue-grey, feathers more or less broadly margined or tipped white, lower scapulars sepia with a grey bloom and narrowly edged white; eye almost entirely surrounded by dusky-black patch continued across ear-coverts; small white line under eye; sides of breast as mantle; remaining under-parts white, feathers of sides of belly and flanks streaked centrally or shaded pale grey; central tail-feathers sepia with a grey bloom and narrowly edged white, rest mouse-grey narrowly edged white, outer ones more or less white on inner webs; primaries black-brown or hair-brown, paler on inner webs, inner ones more or less white towards base; secondaries hair-brown or sepia, tipped white and more or less white at base of inner webs, two next innermost with outer webs more or less white, innermost and coverts as lower scapulars; primary-coverts black or black-brown, inner ones tipped white; rest of wing-coverts sepia or hair-brown with a greyish bloom, greater coverts broadly tipped, median and lower lesser coverts narrowly edged white. This plumage is acquired by complete moult July to Jan. *Summer. Female.*—The body-feathers (not all scapulars), some innermost secondaries and coverts (apparently not median and lesser coverts) are moulted Feb. to June. Crown and centre of nape dull brown-slate; mantle and scapulars same but feathers more or less faintly edged white and those of sides edged cinnamon or pink-buff, forming two streaks converging towards centre; remaining upper-parts as winter but some tail-coverts marked cinnamon-buff at sides; above and below eye a small white patch, rest of sides of face deep brown-slate; sides of neck tawny; lower-throat tawny, sometimes intermixed with feathers spotted brownish-slate, sometimes entirely dull brownish-slate; sides of body as mantle but more or less irregularly marked white; flanks white with central streaks and shadings of pale brown-slate and some under tail-coverts irregularly barred and shaded same; remaining under-parts white; tail-feathers as winter; wing as winter but innermost secondaries and coverts.

sepia without grey bloom and sometimes faintly edged cinnamon on outer webs. *Male*.—As female but feathers of crown, nape and upper-mantle dark sepia, narrowly edged pink-buff and faintly tipped white ; feathers of rest of mantle black-brown or sepia tipped and edged white and usually plentifully margined cinnamon or pink-buff ; centre of back, rump and central upper tail-coverts sepia edged white, some upper tail-coverts edged cinnamon at sides ; sides of face sepia, tawny patch on side of neck less extensive ; lower-throat, upper-breast and patch on sides of breast and belly sepia, feathers fringed white (sometimes feathers of throat margined tawny and sometimes lower-throat more or less tawny) ; flanks white with central streaks and shadings of pale sepia ; under tail-coverts white, some with sepia shaft-streaks.

Nestling.—Pattern and coloration as Grey Phalarope but yellow of upper-parts brighter and richer ; no black-brown line at base of bill.

Juvenile. Male and female.—Fore-head and lores white ; crown black-brown, feathers faintly margined at sides warm buff ; centre of nape sooty-brown ; sides of nape white ; mantle and scapulars black or black-brown, feathers tipped and broadly margined warm buff ; centre of back and rump sooty-brown ; central upper tail-coverts black-brown notched and tipped buff, lateral ones white streaked brown ; eye surrounded by black-brown patch continued across ear-coverts as adult winter ; eye-stripe white ; sides of body pale sepia, feathers edged and suffused light vinaceous-buff or white ; lower-throat white, feathers more or less suffused and faintly tipped light vinaceous-buff ; flanks white more or less suffused buff, streaked pale sepia centrally ; rest of under-parts white ; tail-feathers narrower and more pointed at tip than in adult, central ones edged buff ; wing as adult but innermost secondaries and coverts as scapulars, lower median coverts broadly edged white or buff.



Juvenile of the Red-necked Phalarope
(*Phalaropus lobatus*).

First winter and first summer.—(Not examined.)

Soft parts.—Bill blackish ; legs and feet (ad. summer) dark blue-grey, (juv.) blue-flesh ; iris brown-black.

Measurements and structure.—♂ wing 106–110 mm., tail 43–47, tarsus 19–21, bill from feathers 20–23.5 (12 measured). ♀ wing 112–118, bill 20–24.5. Primaries : 1st minute, 2nd longest, 3rd about equal or 2–3 mm. shorter, 4th 3.5–8 shorter, 5th 12–15 shorter, 6th 19–23 shorter. Longest inner secondary between 4th and 6th primaries. Bill short, straight, slender, slightly flattened at base, tapering to a point. Nostrils basal ; nasal groove extending

nearly to tip of upper mandible. Other structure as in Grey Phalarope.

CHARACTERS.—No subspecies. Distinguished from Grey Phalarope by slender tapering bill, only slightly flattened; and from other waders by partially webbed feet, anterior toes with a lobed lateral membrane.

FIELD-CHARACTERS.—Distinguished from Grey Phalarope in breeding season by black bill, bright chestnut neck, white chin, underparts and small but conspicuous spot over eye. In winter dress nape and streak through eye are dusky-brown, back not pearly as in Grey, but dark grey freckled with white, whilst tail is longer and pointed. Call a soft "pleep, pleep." Gladstone describes alarm-note as a hoarse "chiss-ick," and Aplin speaks of a short "quit," a rapid "ket-ket ket-ket" and "chirra-chirra-chirra" at nesting-places.

BREEDING-HABITS.—Haunts marshy ground, islets in rivers and lakes, etc. *Nest.*—A hollow in tussock of grass, lined with grasses and water-weeds, usually within easy reach of water. *Eggs.*—Normally 4, but sometimes 3 only, while 6 and 7 have been found in single nests, pyriform in shape, stone-colour to olive or greenish in ground with bold irregular blackish markings. Average of 100 eggs, 29.6×20.9 . Max. : 31.6×21 and 31×22.2 . Min. : 26.7×19.7 and 27×19.6 mm. *Breeding-season.*—End May and early June in British Isles; late June and early July in N. Lapland. *Incubation.*—By male alone. Period about 14 days (Hantzsch), about 18 days (Gladstone). Most probably single brooded but fresh eggs may be found even in July.

FOOD.—Chiefly insects and their larvæ picked up from surface of water, very small coleoptera and diptera. Also larvæ of Phryganeidæ, minute mollusca (*Limnæa*) and small worms.

DISTRIBUTION.—*British Isles.*—Summer-resident (3rd week May–Aug.) and vagrant. Breeds in limited numbers Orkneys, Shetlands, O. Hebrides, Tiree (I. Hebrides) and one locality west of Ireland. Elsewhere vagrant, occurring most frequently (but rarely) south and east coasts England, very rarely west coast and very rarely Scotland, except at breeding-haunts, and only three times Ireland outside breeding-locality. Exceptionally inland. Usually in autumn (1st week Sept. to mid-Nov.), occasionally winter and spring (mid-May to mid-June).

DISTRIBUTION.—*Abroad.*—Nests in northern regions of both hemispheres, though more southward than Grey Phalarope; breeding as far south as Iceland, Færoes, central Norway and south Greenland; Russia (according to Buturlin south to Baltic States, Moscow, Perm, Orenburg, Uralsk, but this requires confirmation), east to Commander Is., in N. America from Alaska to Aleutian Islands, Yukon river, north Mackenzie, central Keewatin, south James Bay and north Ungava. Migrates through Europe to Azores

and north Africa (Tunisia); Asia to India, Malayan and Moluccan Islands, China and Japan; and through N. to Central America, Bermudas and occasionally Hawaii.

Genus HIMANTOPUS Briss.

HIMANTOPUS Brisson, Orn., i, p. 46 (1760—Type by tautonymy "*Himantopus*" = *Charadrius himantopus* L., 1758, according to vol. v, p. 33).

Bill almost perfectly straight, hard throughout, not flexible. Red legs enormously long, with exception of Flamingos most long-legged birds in proportion to size. Tibia mostly bare, bare portion about three-quarters length of tarsus which is reticulated, larger in front. No hind toe, outer and middle toes with membrane between basal joints, only indication of web between middle and inner toes. Wings long and pointed, 1st developed primary by far largest. Tail short, middle and outermost pair a little longer, tail therefore appears slightly doubly emarginate. Several species recognized in America, eastern Archipelago from Sunda Islands to New Zealand and Hawaiian Islands, but most can be treated as subspecies of European Stilt, which is only Palearctic form.

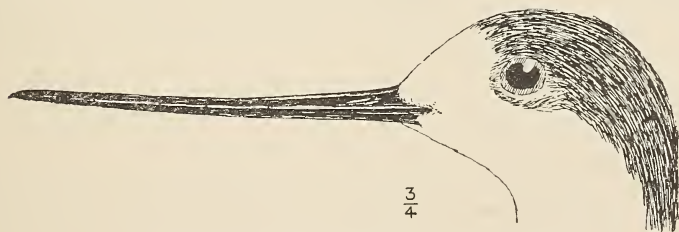
HIMANTOPUS HIMANTOPUS

420. *Himantopus himantopus himantopus* (L.)—THE BLACK-WINGED STILT.

CHARADRIUS HIMANTOPUS Linnæus, Syst. Nat., ed. x, i, p. 151 (1758—"Habitat in Europa australiore").

Himantopus candidus Bonnaterre, Yarrell, III, p. 305; Saunders, p. 563.

DESCRIPTION.—*Adult male. Winter.*—Fore-head and lores white; crown, nape and upper-mantle white, feathers with ashy-brown bases often imperfectly concealed, hinder crown sometimes with a few sooty-brown feathers or marks; a few feathers on nape sometimes tipped black; mantle and scapulars black, glossed metallic blue-green, most feathers narrowly edged brown; back, rump and upper tail-coverts white, latter suffused pale drab-grey;



The Black-winged Stilt (*Himantopus h. himantopus*).

under-parts white, under wing-coverts black, glossed metallic blue-green; tail-feathers pale drab-grey, tipped white, outer ones more or less white; primaries and secondaries (including innermost) black, shading to black-brown or sepia on inner webs and glossed

metallic blue-green ; wing-coverts black, glossed metallic blue-green. This plumage is acquired by complete moult July to Dec. N.B.—Abrasion of brown tips leaves upper-parts uniform metallic blue-green. *Summer*.—Feathers of head and neck all round, a few scattered feathers on upper- and under-parts, some upper and under tail-coverts, sometimes one or two inner secondaries and their coverts, and sometimes some median and lesser coverts are moulted Jan. to June, but apparently not tail and not rest of wings. N.B.—Occasionally body-moult appears to be complete. Coloration as winter but under-parts suffused with roseate tinge and crown and nape more or less black, variations of which may be roughly divided into three main groups : viz. (1) with crown down to below eye and nape black (fore-head and lores white) ; (2) as (1) but crown and region behind eye usually intermixed with white, nape intermixed with white or with white feathers tipped black ; (3) crown white, hinder crown intermixed with black, feathers of nape white, sometimes tipped black.

Adult female. Winter.—As male but feathers of nape apparently seldom tipped black ; mantle and scapulars hair-brown, feathers narrowly tipped white ; primaries (usually) and secondaries with less metallic gloss and lighter brown on inner webs ; innermost secondaries and coverts hair-brown, narrowly tipped white and sometimes slightly glossed metallic-green ; innermost median coverts same but without white tips ; rest of wing-coverts as male, but sometimes duller metallic-green, many coverts narrowly tipped brown. N.B.—Abrasion of white tips makes upper-parts uniform hair-brown. *Summer*.—Apparently as winter ; sometimes feathers of hinder crown tipped black-brown.

Nestling.—Down on fore-head light buff ; from base of upper mandible to hinder crown a black-brown median line (sometimes absent on fore-head) ; rest of crown light buff, with irregular lines and small dots and tufts of black-brown ; nape light buff, down with sooty-brown bases ; rest of upper-parts, sides of neck and sides of body light buff with irregular and indefinite and variable black-brown markings, sometimes tending to form two irregular bands down mantle and back ; an irregular band from uropygial tuft along sides of lower-back, down around tibia intermixed with sooty-brown ; uropygial tuft black-brown, down with buff tips ; from base of upper mandible through eye a black-brown line ; eye-stripe light buff ; remaining under-parts white.

Juvenile. Male.—Fore-head and lores white ; crown to below eye and including ear-coverts sepia, feathers narrowly tipped light buff ; nape light sepia or ash-brown, feathers narrowly tipped light buff or white ; upper-mantle light sepia, feathers tipped and sometimes streaked or spotted, light buff ; mantle and scapulars sepia, feathers bordered buff and some with dark sepia subterminal border ; upper tail-coverts as adult but tipped buff and with pale sepia subterminal border ; rest of body-plumage as adult but under wing-coverts brown-black, narrowly tipped white or buff ;

tail-feathers as adult but usually subterminally barred buff and sepia ; wing duller and with less gloss, remiges with inner webs browner, inner primaries tipped white or buff, secondaries broadly tipped white ; innermost secondaries and coverts sepia, bordered buff, outer webs faintly glossed metallic-green ; greater, median and lesser coverts dull metallic-green, narrowly tipped light buff, proximal median ones browner, innermost sepia. *Female*.—As male, but median coverts sepia, edged warm buff, distal ones slightly glossed metallic-green on outer webs.

First winter. Male.—As adult but crown to below eye including ear-coverts mouse-grey (fore-head and lores white) ; nape, sides of neck, upper-mantle and upper-breast pale mouse-grey, feathers mostly with narrow white tips ; mantle and scapulars hair-brown more or less glossed dull green, feathers with faint white tips ; tail as adult except for worn juvenile feathers ; wing as juvenile but innermost secondaries and coverts hair-brown with slight green gloss and narrowly tipped white, new median and lesser coverts dull metallic-green with narrow hair-brown tips. The juvenile body-feathers (not all scapulars), two or three central pairs of tail-feathers (sometimes all), some innermost secondaries and coverts and most median and lesser coverts, but not rest of wings are moulted July to Feb. *First summer*.—Apparently all the body-feathers, sometimes two central pair of tail-feathers, some innermost secondaries and coverts, some median and lesser coverts are moulted Feb. to June but not wings. Coloration as first winter but crown, region behind eye, nape and upper-mantle intermixed with white feathers, which are sometimes tipped mouse-grey on hinder crown and dark or blackish-grey on nape, in others crown and nape white, feathers with ash-brown bases more or less imperfectly concealed ; mantle, scapulars and innermost secondaries glossed dull metallic-green, feathers shading to hair-brown and mostly broadly tipped same ; cheeks, ear-coverts and sides of neck white usually intermixed with a few pale mouse-grey feathers.

First winter. Female.—As male but mantle and scapulars hair-brown without green gloss, feathers faintly tipped white, innermost secondaries and coverts hair-brown usually without green gloss. N.B.—White edges to feathers of upper-parts are lost by abrasion. *First summer*.—As first winter female but crown, nape, upper-mantle, cheeks, ear-coverts and sides of neck intermixed with white feathers. Mould apparently as male.

Second winter. Male.—As adult winter male but crown to below eye and ear-coverts (not fore-head and lores which are white) black-brown or mouse-grey ; nape, sides of neck and upper-mantle mouse-grey, feathers with narrow white edges. *Second summer*.—Head and neck all round, a few feathers on mantle and scapulars, some upper and under tail-coverts, some feathers on under-parts, one or two innermost secondaries and coverts but not tail or rest of wings are moulted Feb. to June (few examples examined). As adult and apparently always with some black on crown and nape.

Second winter. Female.—As adult female but crown to below eye and ear-coverts (not fore-head and lores which are white), mouse-grey; nape, sides of neck and upper-mantle as 2nd winter male. This plumage is acquired by a complete moult July to Dec. *Second summer.*—Moult as in male.* As adult female but crown more or less intermixed with worn or new sooty-brown or mouse-grey feathers (sometimes whole crown down to below eye and including ear-coverts mouse-grey); nape greyish-white, feathers sometimes tipped mouse-grey or blackish mouse-grey; upper-mantle a mixture of new white and worn pale mouse-grey or greyish-white feathers (nape and upper-mantle sometimes pale mouse-grey, feathers narrowly tipped white).

Measurements and structure.—♂ wing 242.5–251 mm., tail 80–90, tarsus 119–137, bill from feathers 60–68 (12 measured). ♀ wing 222–240, bill 57–66. Primaries: 1st minute, 2nd longest, 3rd 13–21 mm. shorter, 4th 29–38 shorter, 5th 46–59 shorter, 6th 61–75 shorter. Longest inner secondaries between 6th and 8th primaries. Tail almost square but when fresh central pair projects beyond rest and 4th pair is shortest. Bill long, straight, slender, tapering to a point, tip very slightly upturned, culmen decurved at tip; nostrils basal. Legs very long, tarsus covered with hexagonal scales. Hind toe absent, outer and middle toes webbed at base up to about 1st joint, middle and inner ones slightly webbed at base; claw on middle toe with inner edge slightly dilated.

Soft parts.—Bill (ad.) black; legs and feet (winter) rose-red, (summer) vermilion; iris crimson.

CHARACTERS AND ALLIED FORMS.—Other forms occur outside Palearctic region. Long legs, almost straight bill and metallic green and white plumage distinguish species.

FIELD-CHARACTERS.—Quite unmistakable; excessively long pink "legs," straight black bill and boldly contrasted black and white plumage serving at once to identify it. In flight legs extend far out beyond tail. At once distinguished from Avocet, which has also black and white colour scheme, by straight bill, no white on wings and colour and length of leg. Not shy and very noisy and demonstrative at nest. (F.C.R.J.)

BREEDING-HABITS.—Breeds close to or actually in the shallow lagoons where it feeds. *Nest.*—Composed of bits of stalks, etc., mixed with mud. Sometimes standing in water and at other times in muddy ground raised well above surface. Probably apparent difference often caused by variation in water-level. *Eggs.*—Normally 4, occasionally 5 and sometimes 3 only, clay-colour in ground with black spots and irregular blotches and a few ashy shell-marks; occasionally almost unmarked. Average of 100 eggs,

* Sometimes body-moult appears to be complete and central pair of tail-feathers, some innermost secondaries and coverts, some median and lesser coverts are also renewed.—A.C.M.

44×31. Max. : 47.9×31.5 and 45.2×32.5. Min. : 38.8×28 mm. *Breeding-season*.—From early May onward in south Spain, but later in south-east Europe. *Incubation*.—No details. Single brooded. *Food*.—Picked up from surface of water ; insects and floating larvæ (coleoptera, chiefly water-beetles, diptera, etc.), small mollusca (*Physa*, *Succinea*, etc.), tadpoles, and probably fish and frog spawn.

DISTRIBUTION.—*British Isles*.—Rare vagrant. Chiefly in early summer, most south and east coasts England, especially Norfolk (about seventeen). Elsewhere very rare vagrant : Cambs. (one), Notts. (one), Oxon. (two), Berks. (four), Surrey (eight), Gloucester (one), Wales (one), Cheshire (one), Dumfries (two or three), Wigtownshire (one), Clyde (two), Shetlands (one), Orkneys (two), Tay (old doubtful record), Moray (one and another doubtful), Ireland seven occasions.

DISTRIBUTION.—*Abroad*.—Breeds in suitable localities in south France (delta of Rhone), Spain and Portugal, in Sicily, Hungary to Black Sea basin and Balkan Peninsula, Cyprus, in many places in Africa, from Morocco, Algeria, Tunisia and Egypt to south Africa, and in south Asia. Recently nested Belgium in flooded area. Northern birds are migratory, wintering in Africa and south Asia. Different subspecies in America ; Sunda Is. and Philippines to Australia ; New Zealand ; Hawaiian Islands.

Genus RECURVIROSTRA L.

RECURVIROSTRA Linnæus, Syst. Nat., ed. x, i, p. 151 (1758—Monotype : *R. avosetta*).

Bill flattened, compressed, very long, strongly recurved, tapering to very thin point, somewhat soft and flexible. Nostrils slit-like. Bluish legs long, toes connected by deeply cut out membrane, hind toe quite minute. Wings long and pointed, tail square. Colours black and white. Four species according to most authors, unless both American and Australian forms are looked upon as subspecies, though *R. andina* of Chile and Bolivia must be kept specifically distinct.

RECURVIROSTRA AVOSETTA

421. *Recurvirostra avosetta* L.—THE AVOCET.

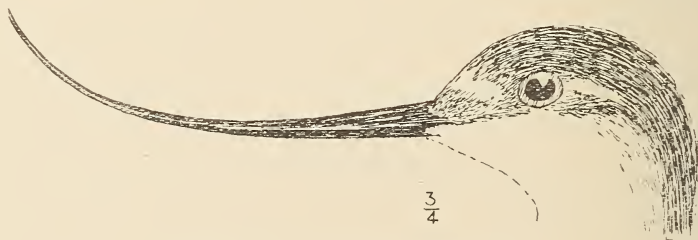
RECURVIROSTRA AVOSETTA Linnæus, Syst. Nat., ed. x, i, p. 151 (1758—Europe. Restricted typical locality : Oeland).

Recurvirostra avocetta Linnæus, Yarrell, III, p. 299 ; Saunders, p. 561.

DESCRIPTION.—*Adult male*. *Winter*.—Fore-head, crown, lores, region round eye and narrow line below eye and nape black ; small white patch above and below eye, lower-nape and mantle white ; sides of mantle and inner scapulars black, forming two broad

parallel bands, some feathers tipped and edged white; lower scapulars brown-black, broadly tipped white, some more or less white; rest of upper-parts and all under-parts white; tail-feathers white, central ones with outer webs faintly suffused palest grey and more or less clouded dusky-brown at tip; primaries black with white bases increasing in extent on inner ones which are more or less white; secondaries white, most of innermost and their coverts with inner webs or both webs clouded pale dusky-brown, shading to white or palest grey towards tip, some brown-black shading to dusky-brown or pale grey at edge; primary-coverts black, basal halves white; median and lower series of lesser coverts black; rest of wing-coverts white. This plumage is acquired by complete moult June to Jan. *Female*.—As male but feathers of fore-head and lores brown-black with white bases and intermixed with white feathers; crown, ear-coverts and nape brown-black. N.B.—White of upper-parts is sometimes clouded with pale grey. As season advances, black upper-parts owing to fading become brownish. *Summer. Male and female*.—The body-feathers (not all scapulars), in some all tail-feathers or central pair only, innermost secondaries and coverts, some median and lesser coverts, but not rest of wings are moulted Jan. to June. Coloration as winter but female as male; white upper-parts not sullied with grey in birds examined.

Nesting.—Down on fore-head cream-white; narrow irregular black-brown line from base of upper mandible to hinder crown; rest of crown pale greyish-buff, irregularly mottled and dotted with tufts of black-brown; nape pale greyish-buff, down with sooty-brown bases; from nape to mantle two irregular parallel sooty-



Juvenile of the Avocet (*Recurvirostra avosetta*).

black lines; two irregular black patches on rump; an irregular black-brown line along ulna, another from base of uropygial tuft towards wing; uropygial tuft black intermixed with light buff; rest of upper-parts pale greyish-buff intermixed with light buff and sooty-brown; from base of upper mandible through eye a narrow black-brown line; rest of under-parts cream-white intermixed with dusky-brown round tibia. Bill slightly upturned at tip.

Juvenile.—Like adult but fore-head, lores, crown down to eye and line below eye and upper-part of nape sepia, feathers faintly

tipped light buff; sides and centre of mantle and inner scapulars sepia or dusky-brown, feathers edged and irregularly marked light buff; upper tail-coverts and tail tipped light buff, some tail-coverts with faint dusky-brown bars towards tip; wing as in adult but primaries dark sepia, 7th and 8th edged white on inner webs; innermost secondaries and coverts more or less sepia or suffused same and mottled and marked light buff at tip and sides; median and distal series of lesser coverts sepia faintly tipped light buff.

First winter. Male and female.—As adult but fore-head, crown, lores, line below eye and upper-nape sepia, feathers white towards base and bases ill-concealed on lores, fore-head and crown, fore-head more or less intermixed with white; black of upper-parts browner; wing as in juvenile except for new innermost secondaries and wing-coverts like those of adult; juvenile wing-coverts faded and worn. The body-feathers, some or all tail-feathers, some innermost secondaries and coverts, varying number of median and lesser coverts are moulted from autumn to Jan. *First summer.*—As adult summer and only to be distinguished by worn sepia primaries, white edges to 7th and 8th when not too abraded and worn sepia juvenile median coverts. Moult apparently as adult but not tail in few birds examined.

Measurements and structure.—♂ wing 223–235 mm., tail 74–88, tarsus 88–91, bill from feathers 76–92 (12 measured). ♀ wing 219–232, bill 75–85. Primaries: 1st minute, 2nd longest, 3rd equal or 2–6 mm. shorter, 4th 6–10 shorter, 5th 15–23 shorter, 6th 25–35 shorter. Largest inner secondary between 4th and 6th primaries. Tail almost square, central pair longest. Bill long, flattened, tapering to a point at tip, which is considerably upturned; nasal groove extending to one-third length of bill. Legs long, tarsus covered with hexagonal scales. Four toes, hind toe small, three front ones united by a web extending to bases of claws, but concave in outline between toes; claw of middle toe with inner edge slightly dilated.

Soft parts.—Bill black; legs and feet bluish-slate; iris (♂) red or red-brown, (♀) hazel.

CHARACTERS AND ALLIED FORMS.—Other forms occur outside Palearctic region. Black and white plumage and long upturned bill distinguish this species from any other British wader. Adults distinguishable from members of same genus by more or less white innermost secondaries.

FIELD-CHARACTERS.—Easily identified in field; when black up-curved bill is visible this alone provides certain test; black and white plumage is also good character and wing is not wholly dark as in Stilt. Grey-blue legs, of only moderate length also provide ready means of distinguishing from Stilt. Confiding in habits as a rule, and noisy on nesting-ground, flying overhead with often repeated clear whistling, “Klweet, klweet.” Male also has a low “Chuck, chuck, chuck, chawy,” uttered on ground. (F.C.R.J.)

BREEDING-HABITS.—Haunts low-lying marshy ground, estuaries and shores of lagoons. *Nest*.—Sometimes on bare mud or sand, or on short grass; mere depression, lined at times with a few bits of drift several pairs usually nesting together. *Eggs*.—Usually 4, sometimes 3 only, and rarely 5, not varying much, pyriform, spotted with black on a clay-buff ground. Average of 100 eggs, 50.5×35 : Max.: 55.6×34.5 and 50.4×37.5 . Min.: 46.8×34.3 and 48.3×31.2 mm. *Breeding-season*.—From end April onward in Spain and from about May 7 in Holland, but oftener about mid-May. *Incubation*.—By both sexes. Period 24–25 days. Single brooded.

FOOD.—Insects, picked up from the surface of water (diptera and coleoptera), also crustacea, especially shrimps (*Crangon*) and their fry, and *Corophium grossipes*; worms and fish-spawn also said to be taken.

DISTRIBUTION.—*British Isles*.—Irregular migrant. Only in Norfolk, Kent and Sussex fairly regular in spring (May–June) but irregular autumn. Elsewhere vagrant, very rare west side Great Britain and north of Yorks. Gloucester (four), North Wales (one), Lanes. (five), O. Hebrides (two), Shetlands (two), Moray (one), Tay (one probable). In Ireland obtained sixteen occasions and a few seen, chiefly south and east coasts but Galway (one), Mayo (one), Donegal (one), Aug. to Feb. Formerly summer-resident and bred Humber to Sussex, last nests being mouth of Trent about 1837 (*Birds Yorks.*, p. 589), and Kent 1842, and probably 1843 (*Hist. Birds Kent*, p. 439).

DISTRIBUTION.—*Abroad*.—Breeds locally on shores of North Sea (Denmark, Holland, Baltic), south France, Spain, from basin of Mediterranean (formerly and perhaps still middle Algeria) eastwards to shores of Black, Caspian and Aral Seas, across Asia to China and in parts of Africa. Northern birds are migratory, wintering in Africa and India, also Europe, casually north as far as Holland. Different forms in N. America and Australia.

Genus LIMOSA Briss.

LIMOSA Brisson, Orn., i, p. 48 (1760—Type by tautonymy "*Limosa*," i.e. *Limosa limosa*, according to vol. v, p. 261).

Bill very long, slightly recurved, tip a little dilated and blunt. Wings long and pointed first developed primary longest. Tail almost square. Legs very long, bare portion of tibia longer than middle toe. Tarsus scutellated, but in *L. lapponica* on upper part more or less broken up into hexagonal scales. Outer and middle toes with small web at base, which is only indicated between middle and inner. Hind toe well developed. Claw of middle toe shorter and more curved in *L. lapponica*, longer and straighter, also more or less "pectinated" in *L. limosa*. 4 species, several subspecies.

LIMOSA LAPPONICA

422. *Limosa lapponica lapponica* (L.)—THE BAR-TAILED GODWIT.

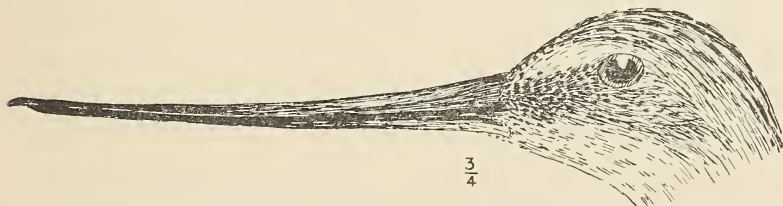
SCOLOPAX LAPPONICA Linnæus, Syst. Nat., ed. x, i, p. 147 (1758—Lapland).

Scolopax leucophæa Latham, Index Orn., II, p. 719 (1790—"Habitat in Europa, frequens in Anglia").

Fedoa pectoralis Stephens, Shaw's Gen. Zool., xii, i, p. 79 (1824—England).

Limosa lapponica (Linnæus), Yarrell, III, p. 494; Saunders, p. 623.

DESCRIPTION.—*Adult male and female.* *Winter.*—Crown streaked ash-brown, feathers edged ash-white or cream; nape same but streaks narrower and paler; mantle and scapulars ash-brown, feathers with sepia shafts, some shaded sepia centrally, mostly with a mouse-grey bloom, scapulars and some mantle feathers edged pale buff or cream; back and rump white, many feathers with irregular streaks or markings of sepia more or less concealed (amount of streaking varies individually); upper tail-coverts white barred sepia; lores and cheeks white, streaked and spotted ash-brown; eye-stripe white, faintly spotted ash-brown; chin and throat white; sides of neck and fore-neck white or pale drab narrowly streaked ash-brown (streaks on fore-neck sometimes scarcely per



The Bar-tailed Godwit (*Limosa l. lapponica*).

ceptible); breast more or less clouded palest drab (sometimes with one or two ash-brown bars); sides of breast ash-brown, feathers with narrow sepia shaft-streaks; sides of belly, flanks and under tail-coverts white, some feathers irregularly barred and marked sepia; belly and vent white; axillaries white, barred, marked or streaked ash-brown or sepia; under wing-coverts same but markings more or less concealed, under primary-coverts more or less shaded pale ash-brown; tail-feathers ash-brown or sepia, edged, mottled and more or less irregularly barred white (sometimes regularly barred but pattern varies individually); primaries sepia or black-brown with white shafts, paler on inner webs which are freckled or margined white for about three-quarters of their length from base, inner ones tipped and narrowly edged white on inner webs; secondaries sepia or ash-brown paler on inner webs, tipped and edged white (sometimes with white shaft-streak) inner webs mottled white towards base, innermost and coverts as scapulars;

primary-coverts black-brown, inner ones tipped white ; greater and median coverts as mantle but more broadly edged and tipped white (greater sometimes with an oval white mark towards tip of inner webs) ; lesser coverts dark ash-brown tipped white. This plumage is acquired by complete moult July to Dec.

Summer. Adult male.—Most of the body-feathers, usually tail, some innermost secondaries and coverts, sometimes some median and an odd lesser covert are moulted Feb. to May, but not rest of wings ; sometimes many winter body-feathers are retained. Feathers of fore-head sepia, faintly edged light pink-cinnamon ; crown and upper-mantle heavily streaked sepia, feathers edged at sides pink-cinnamon ; nape same but streaks narrower and in some paler ; feathers of mantle and scapulars with black-brown or dark sepia centres, notched and edged at sides pink-cinnamon, scapulars narrowly tipped white or light pink-buff ; upper tail-coverts as winter but suffused pink-cinnamon ; lores sepia, feathers faintly edged light pink-cinnamon ; small patch below eye white ; eye-stripe and cheeks pink-cinnamon, sometimes faintly streaked sepia ; ear-coverts same but streaked sepia ; chin pale pink-cinnamon or white minutely spotted sepia ; remaining under-parts pink-cinnamon deepening to orange-cinnamon on breast and belly, some feathers narrowly edged white, feathers of sides of neck (sometimes fore-neck), sides of body, flanks and under tail-coverts with median sepia streaks, under tail-coverts and sometimes flanks irregularly barred or with sagittate sepia markings ; vent sometimes intermixed with white ; tail-feathers as winter but two central pairs sometimes suffused light pink-cinnamon ; wing as winter but new innermost secondaries and wing-coverts as scapulars. *Female.*—As male, but feathers of upper-parts edged and notched paler pink-cinnamon and white, scapulars more broadly tipped white (sometimes edged pale ash-brown) ; upper tail-coverts usually as winter ; eye-stripe paler, sometimes white ; cheeks, sides of neck and throat white, more or less suffused light pink-cinnamon and narrowly streaked sepia ; upper-breast, sides of belly and flanks intermixed with white, all feathers of upper-breast more or less narrowly streaked or spotted sepia ; belly and vent mostly white ; under tail-coverts as winter, a few suffused pink-cinnamon ; tail usually as winter ; new innermost secondaries and coverts as scapulars ; new median coverts as winter but edged or notched light pink-cinnamon. N.B.—Amount of pink-cinnamon on under-parts varies individually.

Nesting.—From base of upper mandible to crown a median sepia streak ; crown sepia ; from lores, above eye encircling hinder crown a light buff band, tips of down sepia ; centre of nape light buff, down sepia at base ; from nape to uropygial tuft, an irregular broad sepia band intermixed light buff ; remaining upper-parts light buff and greyish-white, more or less intermixed sepia ; a sepia streak from lores through eye ; under-parts greyish-white, down of cheeks, chin, throat and fore-neck sooty-brown at base,

fore-neck suffused warm buff, remaining under-parts more or less suffused buff.

Juvenile.—As adult winter but fore-head and crown streaked sepia, feathers edged light buff, nape same but streaks narrower and paler; mantle and scapulars sepia, feathers notched light buff, lower scapulars edged same; upper tail-coverts more or less suffused buff; eye-stripe, lores, cheeks and sides of neck suffused light buff; fore-neck, breast, sides of belly and flanks pink-buff, most feathers (except in centre of breast) with narrow central streaks of sepia; remaining under-parts more or less suffused buff; tail barred white and sepia, sometimes white suffused buff; wing as adult but innermost secondaries and coverts as scapulars; wing-coverts pale sepia edged light buff.

First winter.—As adult winter but distinguished by juvenile wing-coverts and sometimes by some juvenile tail-feathers or a juvenile innermost secondary. The juvenile body-feathers, usually some, or all, tail-feathers, usually some innermost secondaries and coverts, some median and lesser coverts, but not rest of wings and sometimes not innermost secondaries are moulted Sept. to Jan. or even March. *First summer. Male*.—Moult as adult but incomplete; sometimes no moult, worn winter feathers being retained, sometimes some new winter but no summer feathers are acquired. Upper-parts greyer owing to many retained winter feathers; new feathers of crown, nape, mantle and scapulars edged paler pink-cinnamon, nape more broadly streaked sepia; sides of face, chin, throat and sides of neck paler and intermixed with worn winter feathers; rest of under-parts more or less intermixed with new summer feathers like those of adult; wing as first winter but new innermost secondaries as scapulars. *Female*.—As male but new feathers of crown, mantle and scapulars edged white, suffused light pink-cinnamon; nape, cheeks, sides of neck, chin and throat as first winter, sometimes more or less suffused pink-cinnamon; fore-neck and upper-breast streaked sepia (upper-breast sometimes barred same) more or less suffused pink-cinnamon; sides of body and flanks as adult but merely suffused pink-cinnamon, flanks mostly white; rest of under-parts white, sometimes some feathers suffused pink-cinnamon.

Measurements and structure.—♂ wing 202–216 mm., tail 67–77, tarsus 46–51, bill from feathers 72–83 (12 measured). ♀ wing 211–227, bill 95–106. Primaries: 1st minute, 2nd longest, 3rd 3–7 mm. shorter, 4th 13–16 shorter, 5th 25–31 shorter, 6th 38–46 shorter. Longest inner secondary between 4th and 6th primaries. Tail square. Bill long, straight, deep at base, terminal portion flattened and distinctly upturned, nasal groove extending nearly to tip of culmen, similar groove in lower mandible. Tibia and tarsus scutellated in front and behind, front of tarsus towards tibio-tarsal joint covered with hexagonal scales. Four toes, outer and middle ones webbed up to about 1st joint, middle and inner ones slightly webbed at base.

Soft parts.—Bill flesh-pink at base, terminal portion brownish or blackish-horn ; legs and feet greenish-grey ; iris brown.

CHARACTERS AND ALLIED FORMS.—*L. l. baueri* (E. Siberia and W. Alaska) is larger, and has rump more spotted. For distinctions of *Limosa limosa* see under that species. Distinguished from other species by long straight bill, slightly recurved at tip.

FIELD-CHARACTERS.—Large, long-billed, long-legged birds of slender form and graceful carriage, Godwits are easily distinguished from other British waders. Both are birds of double passage. Bar-tailed is more plentiful and many winter on our coasts. It is smaller, has relatively short legs, and shorter but more recurved bill. In breeding dress head, neck and under-parts are bright bay, whereas the bay in Black-tailed is duller and does not extend to lower breast and belly. Winter plumages are more alike in their ashy grey upper and pure white under-parts, but at all seasons rump and tail afford infallible distinctions. Bar-tailed has rump white, tail and tail-coverts barred black and white ; Black-tailed has dark grey rump, and tail with broad white basal band, broad black median band and narrow white tip, while broad white wing-bar of Black-tailed is outstanding feature in flight. Infrequent inland, both are met with chiefly in estuaries and on sandy shores, where they often associate with other waders. Call of Bar-tailed is a loud "low-eet, low-eet." At its breeding places in far north it has a jodelling love-song, and Miss Haviland likens alarm-note when young are in danger to "clapper-clapper" of a scythe sharpened on a whetstone.

BREEDING-HABITS.—Breeds in open places in wooded country, where there is vegetation, and in marshes rather than on tundra. *Nest*.—Hollow in ground, lined with dry grasses or leaves and a few feathers. *Eggs*.—Normally 4, pyriform, of varying shades of olive-green, blotched and spotted with olive-brown, chiefly at large end. Average of 51 eggs, 53.4×37.3 . Max. : 59.5×37.5 and 57.2×39.3 . Min. : 49.1×36.4 and 53×35 mm. *Breeding-season*.—June and early July. *Incubation*.—Shared by sexes. Period not known. Single brooded.

FOOD.—Insects and their larvæ ; chiefly aquatic, but larvæ of a Geometrid moth, beetles and flies also recorded ; worms (*Lumbrici*) and sandworms (*Arenicola*) ; small crustacea (sandhoppers and shrimps) and small mollusca.

DISTRIBUTION.—*British Isles*.—Winter-visitor and passage-migrant (mid-April to mid-June and mid-July to mid-Nov.) Generally distributed around all coasts, but scarce Orkneys and Shetlands. Rarely inland. Many stay winter, but many, especially from Yorks. southward on east coast, are only autumn and spring passage-migrants. A good many non-breeders stay summer, especially in parts of western Scotland and Ireland.

DISTRIBUTION.—*Abroad*.—Breeds in north Europe (rarely as far

west as Lapland and Finland) to Siberia, Tjamen west of Tobolsk, Yenesei, probably east to Taimyr peninsula, being represented further eastwards by *L. l. baueri*. Migratory, wintering as far south as Senegambia and Somaliland in Africa and Mekran coast and Karachi in Asia, passing through intervening countries on migration. Casual Færoes, Iceland, Canaries, Azores, Madeira, Natal, and Seychelles.

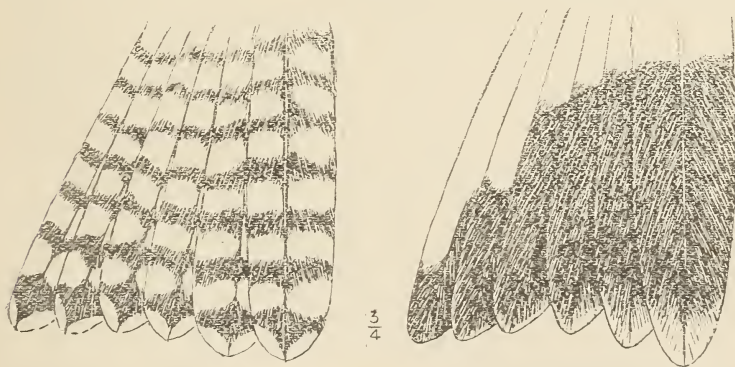
LIMOSA LIMOSA

423. *Limosa limosa limosa* (L.)—THE BLACK-TAILED GODWIT.

SCOLOPAX LIMOSA Linnæus, Syst. Nat., ed. x, i, p. 147 (1758—Europe. Restricted typical locality: Sweden).

Limosa egocephala (Linnæus), Yarrell, III, p. 488; *Limosa belgica* (J. F. Gmelin), Saunders, p. 625.

DESCRIPTION.—*Adult male and female.* *Winter.*—Crown, nape and upper-mantle light drab, feathers narrowly tipped brownish-white; mantle and scapulars drab, feathers with darker shafts; back and rump sepia or black-brown; upper tail-coverts white, lower ones with distal halves black and narrowly tipped white; ill-defined whitish eye-stripe; small white patch below eye; sides of face, sides of neck, lower-throat, breast and sides of belly light drab;



Half the tails of the Bar-tailed (left) and Black-tailed (right) Godwits, adults in winter.

flanks same, tipped white, some more or less white; some under tail-coverts usually irregularly marked black-brown; remaining under-parts white; tail-feathers black, with white tips and bases, most extensive on outer ones, two central pairs shading to drab at tip; primaries sepia, paler on inner webs, which are more or less white towards base, 6th and succeeding with outer webs white for more than their basal halves; secondaries sepia narrowly tipped white and with basal halves white, 8th to 11th with outer webs more or less white; innermost secondaries and coverts as scapulars; primary-coverts sepia, inner ones broadly tipped white; greater

coverts sepia or drab, broadly tipped white ; median coverts drab with dark shafts and narrowly edged white ; lesser coverts sepia, faintly edged white. This plumage is acquired by complete moult Aug. to Dec. *Summer*.—Most of the body-feathers, sometimes tail, some innermost secondaries and coverts, usually a few median coverts and an occasional lesser covert are moulted Feb. to June, but not rest of wings ; a varying number of winter body-feathers are retained and sometimes no new median coverts are acquired.

Male.—Crown heavily streaked black-brown, feathers edged pink-cinnamon, some narrowly tipped white ; nape pink-cinnamon, more or less spotted or streaked sepia ; new feathers of mantle and scapulars sepia or black-brown, some tipped drab and irregularly barred or notched and fringed pink-cinnamon, some drab with sepia streaks ; remaining upper-parts as winter ; eye-stripe light pink-cinnamon ; lores sepia ; cheeks, sides of neck, chin, throat and fore-neck pink-cinnamon, sometimes more or less finely spotted sepia, in some chin white ; breast, sides of belly and flanks pink-cinnamon, feathers tipped white and broadly barred sepia ; belly and short under tail-coverts white, feathers mostly broadly barred sepia or dusky, and sometimes edged pink-cinnamon ; rest of under-parts as winter ; tail and wing as winter but some new innermost secondaries and coverts as scapulars ; new median coverts as mantle, some with alternate pink-cinnamon and sepia bars ; new lesser coverts drab with central sepia shadings and a faint buff or pink-cinnamon marking. *Female*.—As male but crown sometimes as winter, feathers with central sepia shaft-streaks, sometimes edged pink-cinnamon ; nape usually paler, feathers tipped whitish-drab ; mantle and scapulars drab, feathers with sepia shaft or irregular markings, some edged pink-cinnamon ; scapulars mostly notched alternately pink-cinnamon and sepia ; sides of face as winter ; sides of neck and fore-neck paler, plentifully spotted sepia, feathers tipped white and sometimes drab ; rest of under-parts whiter and with fewer bars than in male ; feathers of breast and flanks often tipped drab and sometimes intermixed with drab feathers barred sepia. N.B.—There is considerable individual variation in summer plumage of females ; some are almost as brilliantly coloured as males.

Nestling.—Like nestling *L. l. lapponica* but line from base of bill to crown less defined ; light buff of upper-parts replaced by light pink-cinnamon ; sides of face and neck, chin, throat, fore-neck and breast white, suffused light pink-cinnamon.

Juvenile.—Fore-head and crown streaked sepia feathers edged light pink-cinnamon ; nape light pink-cinnamon, feathers of mantle and scapulars sepia with light pink-cinnamon tips, most scapulars bordered and notched same ; remaining upper-parts as adult ; lores sepia, feathers tipped pink-buff ; streak above eye and patch below eye white, cheeks narrowly streaked drab, feathers faintly edged pink-buff (sometimes uniform pink-buff) ; sides of neck, lower-throat and breast light pink-cinnamon ; sides of breast and

belly dusky-brown, feathers with broad fringes of light pink-cinnamon; flanks white, suffused drab and tipped pink-buff, sometimes irregularly barred dusky; remaining under-parts white or cream; chin, throat and belly more or less suffused buff; tail-feathers as adult, but usually tipped buff, central pair sometimes without drab tips; wing as adult, but innermost secondaries and coverts as scapulars; median coverts dusky-brown or ashy-brown with dark shafts and broad light buff or pink-buff fringes, sometimes some with subterminal sepia shadings; lesser coverts faintly edged light buff.

First Winter. Male and female.—As adult winter and only to be distinguished by worn juvenile outer tail-feathers and worn and faded juvenile median coverts. The juvenile body-feathers, two or three central pairs of tail-feathers (possibly sometimes all), innermost secondaries and coverts, some median and a few lesser coverts are moulted Aug. to Jan., but not rest of wings. *First summer.*—Some body-feathers and innermost secondaries are moulted in spring. Some birds apparently assume adult summer-plumage and are only distinguished from adult by worn appearance of wing-coverts and faded buff edges to juvenile innermost median coverts, when not too abraded; some April and May birds were in moult into summer and others into winter plumage, but as only birds in moult were examined it is impossible to say how much breeding plumage is ultimately acquired.

Measurements and structure.—♂ wing 210–226 mm., tail 74–89, tarsus 75–82, bill from feathers 88–107 (12 measured). ♀ wing 215–240, bill from feathers 104–126. Primaries: 1st minute, 2nd longest, 3rd 3–5 mm. shorter, 4th 8–15 shorter, 5th 20–29 shorter, 6th 32–42 shorter. Longest inner secondary between 4th and 7th primaries. Bill long, straight, deep at base, tip slightly expanded and swollen, nasal groove and groove in lower mandible extending almost to tip. Legs long, tarsus scutellated nearly to tibio-tarsal joint, toes long, claw of middle toe with inner edge strongly pectinated. Other structure as in *L. lapponica*.



Claw of middle toe of the
Black-tailed Godwit.

Soft parts.—Bill, more than basal half flesh-pink, brownish on culmen, terminal portion brown, darkest at tip; legs and feet blackish-green, pales and browner on toes; iris dark brown.

CHARACTERS AND ALLIED FORMS.—*L. l. melanuroides* (E. Siberia) is smaller. Distinguished from *L. l. lapponica* by black tail and white wing-bar (formed by broad white tips to greater coverts); from allied species by long straight bill slightly recurved at tip.

FIELD-CHARACTERS.—Distinctive characters are referred to under last species, and it is only necessary to emphasize greater size and much longer legs and bill, latter nearly straight. In flight long legs project behind tail and wing is trifasciate, a broad ill-defined white

band extending its whole length. Call, more musical than that of Bar-tailed, is a loud, penetrating "gr-wee-toe" often repeated.

BREEDING-HABITS.—Haunts grassy flats near estuaries and low-lying coasts and inland marshes and moors; also occasionally in bush-grown sandhills in Holland. *Nest*.—A thick pad of dead grasses and bents in a hollow among luxuriant grass as a rule; occasionally also in more open sites. *Eggs*.—Normally 4, but 5 and even 6 have been found, pyriform, ground-colour ranging from greenish-olive to brownish, with blotches, smears and spots of varying shades of brown and occasionally a blackish streak. Average of 100 eggs, 54.7×37.3 . Max. : 59.8×37.8 and 55.3×40.7 . Min. : 48.5×37.7 and 55×34 mm. *Breeding-season*.—From end April through May in Central Europe; end May and early June in Iceland. *Incubation*.—Apparently shared by sexes. Period 24 days (Faber). Single brooded.

Food.—Insects and their larvæ, including coleoptera, orthoptera, odonata, etc.; also worms, and according to Naumann fish and frog spawn as well as tadpoles and mollusca (snails, slugs and both marine and fresh-water mollusca).

DISTRIBUTION.—*British Isles*.—Irregular passage-migrant (mid-April to mid-June and early August to 3rd week Oct.), chiefly autumn, occasionally spring, more rarely winter and summer. Mostly along east coast from Humber southwards and on south coast; scarcer north of Humber on east side and everywhere on west side Great Britain; has occurred O. and I. Hebrides, Orkneys and Shetlands. Fairly frequent migrant to Ireland. Occasionally inland. Formerly summer-resident breeding from south Yorks. to Norfolk; last 1847 Norfolk, and possibly 1885 Lincs. No proof of more recent breeding.

DISTRIBUTION.—*Abroad*.—Breeds in north Europe and Asia; in Europe, in Holland and Belgium, in Iceland, (rarely Færoes), in Jutland and north Germany (sparingly in Sweden), in Hungary, in Russia north to 60° , and west Asia. Migrates through Europe and west Asia, exact limits to east not yet known; winters in basin of Mediterranean, north-west Africa to Canaries, also Madeira and Azores and Abyssinia, and one record from Natal; in Asia winter-quarters are chiefly India and Ceylon. Accidental in Greenland. Represented by a closely-allied race further eastwards in Mongolia, east Siberia, Kamtchatka, south in winter in east Asia to north Australia.

Genus NUMENIUS Briss.

NUMENIUS Brisson, Orn., I, p. 48 (1760—Type by tautonymy "*Numenius*," i.e. *Scolopax arquata* L. 1758, according to vol. v, p. 311).

Large to middle sized Scolopacine Waders with long curved bills, blunt and very slightly thickened at tip. Tarsus long, longer than middle toe, covered with hexagonal scales, but in front partly

scutellated, a little more so, though not entirely in nestling. Hind toe well developed. Wings long, first developed primary longest. Tail rounded, less than half length of wing. 9 species with several subspecies, northern latitudes, on migration all over world

Key to species of genus NUMENIUS.

- | | | |
|---|--|---------------------------------|
| 1 | { Inner webs of primaries uniform brown . . . | <i>N. borealis</i> , p. 668 |
| | { Inner webs of primaries barred . . . 2 | |
| | { Crown streaked 3 | |
| 2 | { Crown deep brown with wide light stripe along middle | <i>N. phæopus</i> , p. 665 |
| 3 | { Larger, wing over 270, sides striped . . . | <i>N. arquata</i> , p. 661 |
| | { Smaller, wing under 270, sides spotted . . . | <i>N. tenuirostris</i> , p. 669 |

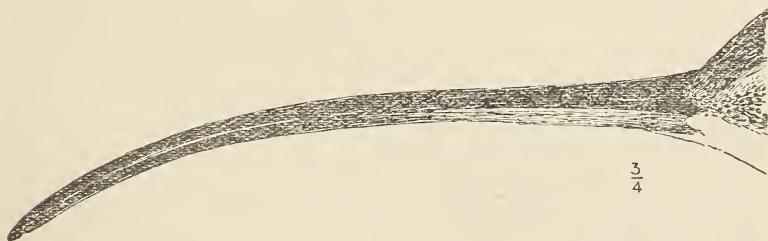
NUMENIUS ARQUATA

424. *Numenius arquata arquata* (L.)—THE COMMON CURLEW.

SCOLOPAX ARQUATA Linnæus, Syst. Nat., ed. x, i, p. 145 (1758—Europe. Restricted typical locality: Sweden).

Numenius arquata (Linnæus), Yarrell, III, p. 499; Saunders, p. 627.

DESCRIPTION.—*Adult male and female. Winter.*—Crown heavily streaked black-brown, feathers margined light pink-buff; nape same but streaks narrower; feathers of mantle and scapulars with black-brown centres, margined drab, sometimes shading to pink-buff, some scapulars more or less notched black-brown; lower scapulars similar but ground-colour white; back and rump white with black-brown streaks or irregular markings, sides usually white, amount of streaking varies individually; upper tail-coverts



Bill of the Common Curlew (*Numenius a. arquata*), adult male.

white suffused pink-buff, irregularly barred brown-black and sepia, some with sagittate subterminal patches of same; patch above and below eye white; chin white, sometimes minutely streaked sepia; lores, cheeks, sides of neck, throat and breast pink-buff, with sepia streaks, broadest on breast; sides of belly, flanks and under tail-coverts white (sometimes suffused pink-buff), irregularly barred sepia and usually with subterminal sagittate markings of same, some tail-coverts narrowly streaked sepia; belly white with long oval sepia spots or streaks, sometimes with sagittate sepia

marks ; vent white, sometimes more or less streaked or spotted sepia ; axillaries and under wing-coverts white more or less irregularly barred sepia, usually with subterminal sagittate sepia marks, under median and lesser coverts often entirely white ; tail-feathers white, more or less suffused drab, some tinged pink-buff, especially central feathers and heavily barred black-brown ; primaries black ; distal three-fourths of inner webs mottled and barred white, inner ones tipped white, 7th and succeeding notched white on outer webs ; secondaries black-brown, tipped and both webs notched and indented white, innermost and coverts as scapulars ; primary-coverts black, inner ones broadly tipped and sometimes with one or two notches of white ; greater coverts as secondaries ; median coverts sepia, edged and more or less irregularly notched and indented white ; lesser coverts sepia edged white. This plumage is acquired by complete moult Aug. to Dec. *Summer*.—The body-feathers (not all scapulars), tail, some or all innermost secondaries and coverts, sometimes some median and lesser coverts are moulted Feb. to May, but not rest of wings. As winter but feathers of crown and nape edged cinnamon-buff ; feathers of mantle and upper scapulars edged and notched cinnamon-buff ; lower scapulars bordered cinnamon-buff ; sides of neck, throat, fore-neck and breast cinnamon-buff streaked sepia ; sides of belly and flanks suffused cinnamon-buff ; tail as winter ; wing as winter but new innermost secondaries and coverts as lower scapulars ; new median coverts notched pale cinnamon-buff.

Nestling.—Forehead and broad eye-stripes meeting on nape cream-buff or pink-buff, down with brown-black tips ; from base of upper mandible to crown a narrow median black or black-brown line ; centre of crown brown-black, intermixed towards nape with cream-buff or pink-buff ; from posterior corner of eye to nape an interrupted brown-black line ; centre of lower-nape brown-black ; rest of nape cream-buff or pink-buff ; two brown-black patches on wing ; from nape to middle of back two parallel brown-black bands ; on either side another similar band extending towards side of breast ; remaining upper-parts pinkish or cream-buff with irregular and variable bands and patches of brown-black ; sides of neck and fore-neck suffused cinnamon-buff ; remaining under-parts cream-buff.

Juvenile.—Like adult summer but feathers of upper-parts edged light or warm buff instead of cinnamon-buff, nape with narrower and paler sepia streaks ; feathers of mantle and scapulars dark sepia or brown-black edged buff and scapulars notched as well ; upper tail-coverts as adult but suffused buff ; sides of face, sides of neck, throat, breast and belly light or warm buff, more narrowly streaked sepia than in adult ; sides of belly and flanks same, streaked and irregularly barred sepia ; vent white ; under tail-coverts and axillaries as adult but usually less barred and without sagittate sepia markings, sometimes entirely white except for brown shafts, under tail-coverts more narrowly streaked ;

tail-feathers as adult but narrower, more closely barred, and clouded buff; wing as adult but innermost secondaries and coverts as scapulars; sometimes white notches of greater coverts suffused buff; median coverts with sepia centres tapering to a point and more or less indented by broad warm buff edges; lesser coverts sepia, edged warm buff.

First winter.—As adult and only to be distinguished by worn juvenile tail-feathers and worn juvenile innermost secondaries with buff notches more or less abraded, sepia wing-coverts with faded buff edges, innermost median coverts notched and edged at sides of feathers warm buff. The juvenile body-feathers (not lowest scapulars), sometimes 3 central pair of tail-feathers, sometimes no tail-feathers, sometimes some innermost secondaries and their coverts, some median and lesser coverts are moulted Aug. to Dec.

First summer.—As adult and only to be distinguished by worn juvenile tail-feathers, one or two innermost secondaries and juvenile median and lesser coverts. Molt apparently as adult, but tail does not appear usually to be moulted, though sometimes central pair is moulted.

Measurements and structure.—♂ wing 280–303 mm., tail 106–121, tarsus 66–80, bill from feathers 100–124 (12 measured). ♀ wing 295–321, bill from feathers 130–152. Primaries: 1st minute, 2nd longest, 3rd 3–11 mm. shorter, 4th 14–21 shorter, 5th 30–38 shorter, 6th 46–58 shorter. Longest inner secondary between 4th and 5th primaries. Tail slightly rounded. Bill long, tapering and considerably decurved, tip of culmen obtuse and thickened, with a groove on its under surface into which lower mandible fits; nasal groove extends to about three-fourths length of culmen, similar groove in lower mandible to about half length of bill. Legs long, tibia and proximal portion of tarsus covered with hexagonal scales; distal portion of tarsus in front covered with more or less regular scutes. Four toes, middle and outer ones webbed at base up to about 1st joint, middle and inner ones to below first joint, webs continued as marginal flaps of skin up both sides of middle toe and inner sides of other toes up to base of nail; inner edge of middle toe dilated.

Soft parts.—Bill dark horn, tinged reddish, under mandible flesh-pink at base; legs and feet greenish-grey; iris brown.

CHARACTERS AND ALLIED FORMS.—*N. a. lineatus* (Siberia) has upper-parts lighter, under-parts more narrowly streaked, back and rump almost white, axillaries and under wing-coverts white. For distinctions from *N. phæopus* and *N. tenuirostris* see under those species. Large size, long decurved bill distinguish Curlew from other waders.

FIELD-CHARACTERS.—Curlew and Whimbrel are unique among British birds in their long, decurved bills; large size, robust build, and striated brown plumage with triangular white patch on rump are also diagnostic. Curlew is larger and coarser, has no distinctive

stripes on crown, and is too wary to allow a close approach. One of the commonest shore-birds at all times of year, walking sedately at edge of tide or on sandbanks and mud-flats, picking up food or thrusting its bill up to the base in soft ooze. In late summer reinforced by influx from nesting-grounds on bogs, moorlands and rushy upland pastures, and later by oversea immigrants. A bubbling love-song is uttered as bird hovers or sails on motionless wings over nesting-ground. Calls are a shrill "cour-lie," a loud musical "quoy, quoy" and a screaming "kly-ike," and, when young are threatened a frenzied scream, "whi-shishi."

BREEDING-HABITS.—Haunts rough pastures, moorlands and marshes. *Nest*.—Hollow in ground, sometimes open, at others sheltered by rough grass, heather, etc., and lined with dry grasses. *Eggs*.—Normally 4, occasionally 3 only and rarely 5, large, pyriform, varying from olive to greyish-green blotched or spotted with brown, exceptionally almost white. Average size of 100 eggs, 67.2×47.4 . Max.: 75.5×55 . Min.: 56.2×44 and 61×43 mm. *Breeding-season*.—Usually from last fortnight April to early May, but also at times early in April. *Incubation*.—Shared by sexes. Period 30 days. Single brooded.

FOOD—Varied according to habitat: Mollusca, including *Cardium*, *Tellina*, *Bythina*, *Mytilus* and inland, snails (*Helix aspersa*, *H. nemoralis*, etc.) and slugs; also crustacea (small crabs); rock-pool fishes, such as Blennies; small frogs and worms (lug-worm and earthworms). Also when inland insects and larvæ; diptera (*Tipulidæ* and larvæ), larvæ of lepidoptera, orthoptera (*Acheta*), rhynchota (*Notonecta*) and coleoptera (*Pterostichus*, *Rhizotragus*, *Anisoplia*, *Dytiscus*, *Scarabæus*, *Aphodius*, *Harpalus*, *Zabrus*). Also berries (seeds of *Polygonum*, berries of *Empetrum* and *Vaccinium*, etc.), grasses and sea-weed (*Ulva*).

DISTRIBUTION.—*British Isles*.—Resident; to what extent breeding birds are migratory is uncertain but ringing records indicate a westerly movement to Ireland and west coast Scotland. Breeding haunts are reached early March and fully populated by beginning April; departure begins mid-July and desertion is complete by end August. Passage-migrant (early March to early June and mid-Aug. to mid-Nov.), and winter-visitor and occasionally summer on all coasts. Breeds sparingly Lines., Norfolk, Surrey, Dorset, Somerset, Wilts. and Hants. (exceptionally Sussex), more freely Devonian peninsula, commonly Wales and neighbouring counties, and from Staffs. and Derbyshire northwards on high ground (as well as on low ground in Yorks.). Also Isle of Man. In Scotland breeds generally and commonly, except O. Hebrides, where nesting not proved. In Ireland breeds all provinces.

DISTRIBUTION.—*Abroad*.—Breeds in Scandinavia, Russia, from Kirghiz Steppes, north and south Germany (Bavaria), Switzerland, Austria, Galizia to Dobrogea, Denmark, Holland, Belgium and in

Brittany. Passes through central and south Europe, appearing on Canaries, Madeira and Azores, wintering from Mediterranean districts to South Africa and Madagascar. Casual in Iceland and United States. Represented by a well-distinguished race further eastwards and by another species in east Siberia.

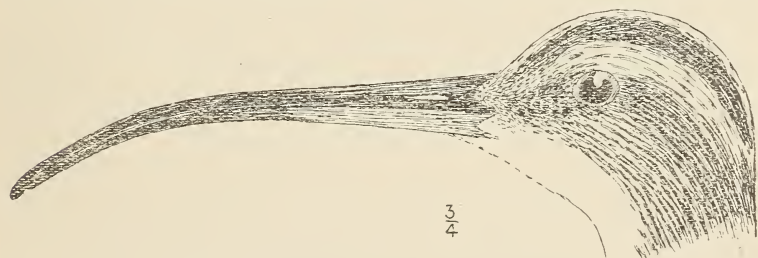
NUMENIUS PHÆOPUS

425. *Numenius phæopus phæopus* (L.)—THE WHIMBREL.

SCOLOPAX PHÆOPUS Linnaeus, Syst. Nat., ed. x, i, p. 146 (1758—Europe. Restricted typical locality: Sweden).

Numenius phæopus (Linnaeus), Yarrell, III, p. 507; Saunders, p. 629.

DESCRIPTION.—*Adult and female.* *Winter.*—From base of upper mandible to hinder crown two broad sepia bands separated by an irregular light buff median streak, some feathers streaked sepia; nape narrowly streaked light sepia, feathers edged pink-buff; feathers of mantle with light sepia centres shading to light drab or brownish-white at edge; scapulars same but notched drab or brownish-white and narrowly edged white, lower-scapulars notched



The Whimbrel (*Numenius ph. phæopus*), adult male.

and broadly tipped white; back and rump white, feathers with partially concealed olive-brown bases or streaks; upper tail-coverts white irregularly marked and barred sepia; eye-stripe white, streaked sepia; lores sepia; cheeks, sides of neck, fore-neck and breast white or pink-buff, narrowly streaked light sepia; sides of belly and flanks cream-white, more or less irregularly barred and streaked light sepia; chin, throat, belly, vent and under tail-coverts white, some of latter irregularly barred sepia; axillaries white barred sepia; under wing-coverts white with more or less concealed sepia streaks and bars; tail-feathers hair-brown shading to brownish-white on outer ones, barred sepia and broadly tipped white; primaries sepia, with about basal three-fourths of inner webs paler and notched and indented with white, inner primaries tipped white and notched white on outer webs; secondaries sepia, tipped, notched and indented white, innermost and coverts as scapulars; primary-coverts sepia, tipped white;

rest of wing-coverts light sepia, notched and edged white and with dark shafts. This plumage is acquired by complete moult June to Jan. *Summer*.—The body-feathers (not all scapulars), tail, some innermost secondaries and coverts, some median and lesser coverts are moulted Feb. to May, but not rest of wings. Coloration as winter.

Nestling.—Similar to Curlew but crown with two broad sepia bands extending from fore-part to nape and separated by a narrow buff streak, remaining upper-parts and under-parts as Curlew but buff of upper-parts lighter, under-parts greyish-white tinged cream-buff.

Juvenile.—Like adult but feathers of mantle and scapulars sepia, notched at sides pinkish or warm buff (lower scapulars as adult); feathers of back, rump and upper tail-coverts with faint terminal brownish lines, soon abraded; upper tail-coverts suffused pink-buff; under-parts as adult but sides of neck, fore-neck and breast rather more narrowly and closely streaked; tail and wing as adult but innermost secondaries and coverts as scapulars; wing-coverts notched light buff, lesser coverts also edged same.

First winter.—As adult winter and only to be distinguished by faded buff notches to juvenile wing-coverts, least abraded on innermost median coverts. The juvenile body-feathers (not all scapulars), some or all tail-feathers, some innermost secondaries and coverts, some median and lesser coverts but not rest of wings, are moulted Aug. to Feb. *First summer*.—As adult and only to be distinguished by worn juvenile wing-coverts. Moult as in adult.

Measurements and structure.—♂ wing 232–250 mm., tail 87–99, tarsus 50–61, bill from feathers 76–86 (12 measured). ♀ wing 243–265, bill 80–99. Primaries: 1st minute, 2nd longest, 3rd 4–7 mm. shorter, 4th 10–16 shorter, 5th 22–31 shorter, 6th 39–45 shorter. Longest inner secondary between 4th and 6th primaries. Bill of moderate length and decurved, nasal groove and groove in lower mandible extending about two-thirds length of bill. Tarsus with the more or less regular scutes extending proportionately further up than in Curlew and portion covered with hexagonal scales proportionately less. Other structure as in Curlew.

Soft parts.—Bill dark horn, base of lower mandible flesh-pink; legs and feet greenish-grey; iris dark brown.

CHARACTERS AND ALLIED FORMS.—*Numenius ph. variegatus* (E. Siberia and Japan) has back and rump heavily streaked and barred olive-brown, axillaries more heavily barred and under wing-coverts more plentifully streaked and barred; *N. ph. alboaxillaris* (E. Africa) with axillaries, under wing-coverts, under tail-coverts, back and rump pure white has been described but requires further confirmation as breeding haunts are unknown. Two broad sepia bands down crown together with size and decurved bill distinguish Whimbrel from Curlew and other British waders.

FIELD-CHARACTERS.—Similar to Curlew in haunts, habits and general appearance, but is smaller, with comparatively shorter bill; and is far tamer, usually permitting examination at quarters close enough to make out characteristic coloration of crown, two broad bands divided by narrow pale streak. Except at a few breeding-stations on Scottish islands is, in Britain, a bird of double passage, more plentiful in spring. Migrating by day and night, its passage, singly or in small parties, is often revealed by a clear tittering cry, "tetty, tetty, tetty, tet." Bubbling love-song is not unlike Curlew's.

BREEDING-HABITS.—Breeds on tundra and heather-covered moors and islands. *Nest*.—A hollow in ground, scantily lined with bents, etc. *Eggs*.—Normally 4, but 5 have been recorded and 3 in second layings, large, pyriform, varying from olive-green to brownish-green, occasionally blue-green, with spots and blotches of brown and ashy shell marks. Average of 100 eggs, 58.9×41.3 . Max.: 65.1×41.7 and 57×44 . Min.: 52×41.6 and 55.3×36 mm. *Breeding-season*.—Latter part May and first half June. *Incubation*.—By both sexes. Period 21–25 days (Hantzsch). Single brooded.

FOOD.—Insects, including coleoptera, orthoptera (*Forficula*, *Acheta*, etc.) and larvæ of diptera; worms (*Lumbricus*) and sand-worms (*Arenicola*); crustacea (small crabs, sandhoppers and shrimps); mollusca, both land and marine (*Helix ericetorum*, *Limax agrestis* and small marine univalves and bivalves). Also berries of *Empetrum nigrum* and *Vaccinium myrtillus*.

DISTRIBUTION.—*British Isles*.—Summer-resident and passage-migrant, end 2nd week April (early date March 24, 1887) to 2nd week June, and 3rd week July (early dates July 7, 1910, Suffolk and July 8, 1911, and 1912 Norfolk) to 4th week Nov. A few breed Orkneys and Shetlands, said to have bred St. Kilda 1905, probably formerly bred Flannan Isles, and apparently breeding-birds have been seen North Rona (O. Hebrides), and possibly on an islet off west Ross. No authentic case of breeding elsewhere. Passage-migrant all coasts and often inland, exceptionally winter, and a few non-breeders stay summer.

DISTRIBUTION.—*Abroad*.—Breeds in Iceland (also said sometimes to winter), Færoes, north Scandinavia, northern Russia and west Siberia, occasionally in Greenland. Migrates through western Palæarctic region and winters on coasts of Africa to Madagascar, Seychelles, Comoros, Mauritius, Arabia, western India, some individuals remaining in winter-quarters all the year round. Casual Canaries, Madeira, Azores, once Sable Is. near Nova Scotia. Replaced in north-east Asia by *N. ph. variegatus*, which migrates to south-east Asia and Australia. *N. ph. alboaxillaris* has been described from E. Africa but requires further study and confirmation.

NUMENIUS BOREALIS

426. *Numenius borealis* (Forster)—THE ESKIMO CURLEW.

SCOLOPAX BOREALIS J. R. Forster, *Philos. Trans.*, LXII, p. 431 (1772—Fort Albany, Hudson Bay).

Numenius borealis (J. R. Forster), Yarrell, III, p. 512; Saunders, p. 631.

DESCRIPTION.—*Adult male and female.* *Winter.*—Fore-head and crown sepia, feathers edged pink-buff, most broadly on centre of crown and forming a more or less distinct mesial pink-buff streak; nape pink-buff, narrowly streaked olive-brown; feathers of mantle, scapulars, back and rump olive-brown (or black-brown tinged dark olive), plentifully notched and edged pink-buff; upper tail-coverts olive-brown, deeply notched or barred and edged pink-buff; eye-stripe light buff or white, faintly streaked olive-brown; lores and spot in front of eye sepia, feathers of lores narrowly edged pale pink-buff; small patch below eye, chin and throat white; cheeks, sides of neck and fore-neck pink-buff, narrowly streaked olive-brown; breast, sides of belly, flanks and under tail-coverts pink-buff, with bars and subterminal Y-shaped marks of olive-brown; belly and vent pink-buff, some feathers of belly with small Y-shaped subterminal markings or narrow shaft-streaks of olive-brown; axillaries and under wing-coverts light pink-cinnamon, barred olive-brown; tail-feathers light drab, barred olive-brown, edged and tipped pink-buff, outer ones more or less suffused same; primaries sepia tinged greenish, paler on inner webs, inner ones faintly tipped white; secondaries pale olive-brown narrowly edged pink-buff, inner webs sometimes faintly mottled brown; innermost secondaries and coverts as scapulars; primary-coverts sepia, inner ones tipped white; greater coverts olive-brown narrowly edged and faintly notched pink-buff; median and lesser coverts olive-brown, edged, and median coverts notched, pink-buff. This plumage is acquired by complete moult from Sept. (very little material examined). *Summer.*—No moulting birds examined. Coloration apparently as winter.

Nestling.—(Not examined.)

Juvenile. *Male and female.*—Resembling adult but feathers of fore-head and crown dark sepia narrowly edged light buff with a light buff mesial streak down crown; feathers of mantle and scapulars black-brown tinged deep olive and edged at sides (and here and there notched) light buff, back and rump same but notches more or less absent, feathers tipped pink-buff; under-parts and tail as adult; wing as adult but innermost secondaries and coverts olive-brown edged at sides and slightly notched light buff; median coverts pale olive-brown edged light buff.

First winter.—(Not examined.)

Measurements and structure.—♂ wing 205–217 mm., tail 75–82, tarsus 40–44, bill from feathers 50–53 (11 measured). ♀ wing 222–226, bill 56–65 (7 measured). Primaries: 1st minute, 2nd longest, 3rd 4–11 mm. shorter, 4th 12–22 shorter, 5th 29–35 shorter,

6th 43-53 shorter. Longest inner secondary between 5th and 7th primaries. Bill short, slender, tapering to a point, decurved, nasal groove and faint groove in lower mandible extending to one-third from tip. Other structure as Curlew but regular scutes on front of tarsus extend further up tarsus towards tibio-tarsal joint.

Soft parts.—Bill black; legs and feet dark slate; iris brown.

CHARACTERS.—No subspecies. Small size, black-brown upper-parts tinged olive and plentifully notched pink-buff, together with uniform primaries with scarcely a trace of barring distinguish this from other species of *Numenius*.

BREEDING-HABITS.—Haunts barren grounds of north-west Canada.

Nest.—Mere hollow in tundra. *Eggs.*—Normally 4, sometimes 3 only, pyriform, ground pale ashy-green or olive-drab, spotted and blotched with brown. Average of 8 eggs, 52.1×36.8 . Max.: 57.1×38 and 54×39.5 . Min.: 48.7×35.7 and 51×34.6 mm.

Breeding-season.—Latter part June and early July. *Incubation.*—No details. Single brooded.

FOOD.—Insects and their larvæ, especially diptera and fresh-water insects, small univalve mollusca, and large numbers of crowberries (*Empetrum nigrum*).

DISTRIBUTION.—*British Isles.*—Seven or eight. One Sept. 6, 1855, and one Sept. 21, 1880, Kincardine. One Sept. 29, 1879, Aberdeen. Two Nov., 1852, near Woodbridge (Suffolk), and one alleged R. Alde (Suffolk) prior to 1870. One Sept. 10, 1887, Scilly Isles. One Dublin Market, Oct., 1870, alleged from Sligo (Saunders p. 631).

DISTRIBUTION.—*Abroad.*—Used to breed on Barren Grounds of north Mackenzie in arctic America, passing through United States and wintering in S. America from Galápagos Islands and Chile to Brazil, Argentina, and Patagonia. Also recorded from Greenland, Pribylof Is., Bermuda, and Falkland Islands; flock observed on coast of Tchukutchi-land in August. Has become very rare, not observed since 1915, and feared to have become extinct.

NUMENIUS TENUIROSTRIS

427. *Numenius tenuirostris* Vieill.—THE SLENDER-BILLED CURLEW.

NUMENIUS TENUIROSTRIS Vieillot, *Nouv. Dict. d'Hist. Nat.*, nouv. éd., viii, p. 302 (1817—Egypt).

Numenius tenuirostris Vieill. *M. J. Nicoll, Brit. B.*, v, p. 124.

DESCRIPTION.—*Adult male and female.* *Winter.*—Very similar to Curlew but crown and nape paler, feathers of fore-head and nape edged white or light buff, those of crown more broadly margined whitish or pink-buff; mantle and scapulars paler, some scapulars shading to white at edge; back and rump white; upper tail-coverts and lower-rump white with shaft-lines, oval spots and

heart-shaped sepia marks, some upper tail-coverts irregularly barred same ; eye-stripe, cheeks and sides of neck, fore-neck and upper-breast light buff or white, streaked sepia ; sides of belly and flanks white with heart-shaped patches and irregular marks of sepia ; rest of breast and belly white with pear-shaped sepia markings less frequent on belly ; vent, under tail-coverts, axillaries and under wing-coverts white, sometimes some under tail-coverts and axillaries with a narrow sepia streak or marking ; tail-feathers



Belly feather of the Slender-billed Curlew
(*Numenius tenuirostris*).

white, broadly barred sepia ; primaries sepia, paler on inner webs which are more or less mottled white towards base, inner ones margined or notched white on outer webs, inner webs notched and indented white ; secondaries and greater coverts sepia, margined, notched and indented white ; innermost and coverts as scapu-

lars ; primary-coverts black-brown, inner ones tipped white ; median and lesser coverts as in Curlew but edged white, median coverts notched same. This plumage is acquired by complete moult in autumn. *Summer*.—Moult apparently as in Curlew but not many birds in moult examined. As winter but feathers of crown, mantle and scapulars margined pink-buff ; sides of neck and breast more closely streaked and belly and flanks more plentifully spotted and with more numerous heart-shaped marks ; new innermost secondaries and coverts apparently as winter.

Nestling.—(Not examined.)

Juvenile.—Resembles adult summer, but feathers of crown, nape, mantle and scapulars edged light or warm buff, scapulars notched same ; cheeks, sides of neck, fore-neck and upper-breast with narrow sepia streaks, those on breast widening out at tip of feather ; sides of belly and flanks without heart-shaped markings and irregularly streaked and barred sepia ; belly white, with sometimes some sepia streaks on upper portion ; tail as adult but bars slightly narrower ; wing as adult but innermost secondaries and coverts as scapulars ; median coverts sepia, edged and slightly notched light buff or white ; lesser coverts edged light buff or white.

First winter.—As adult and hardly distinguishable except by worn appearance of juvenile tail-feathers and wing-coverts and by innermost median coverts having buff edges at sides only and not white or pinkish-white all round as in adult. Moult apparently as in Curlew but very few moulting specimens examined. *First summer*.—Moult apparently as adult, after which only distinguishable if innermost median coverts are not too worn and faded.

Measurements and structure.—♂ wing 245–256 mm., tail 91–96, tarsus 57–65, bill from feathers 67–75 (9 measured). ♀ wing 250–264, bill 80–94 (5 measured). Primaries : 1st minute, 2nd

longest, 3rd 4–7 mm. shorter, 4th 10–19 shorter, 5th 25–32 shorter, 6th 41–51 shorter. Longest inner secondary between 4th and 6th primaries. Bill of moderate length, decurved, nasal groove and groove in lower mandible extending about two-thirds length of culmen. Other structure as in Curlew.

Soft parts.—Bill brown, lower mandible flesh at base; legs leaden-grey; iris brown (Dresser).

CHARACTERS.—No subspecies. Smaller size, lighter coloration of upper-parts, white back, heart-shaped and oval spots on under-parts distinguish this species from Curlew.

BREEDING-HABITS.—Haunts open marshes or wet steppe adjoining forests. *Nest*.—Shallow depression in ground on dry hillock or patch in marsh, lined with dry grasses. *Eggs*.—Normally 4, pyriform, greyish-olive to ochreous or reddish-brown with dark markings of greyish-brown and ashy shellmarks. Ushakov gives measurements of 4 eggs 64.9×46.9 , 65.6×47.1 , 64.5×46 and 64×45 mm. *Breeding-season*.—End May to June 10th. *Incubation*.—Little known, but apparently female usually incubates while male keeps guard. Single brooded.

FOOD.—Insects (including *Licinus silphoides*), worms and small mollusca.

DISTRIBUTION.—*England*.—Four or more. Young male and female Sept. 21, and adult male Sept. 23, 1910, from “small flock” near Brookland (Kent) (*ut supra*). Male Sept. 10, 1914, Jury’s Gap (Kent) (H. W. Ford-Lindsay, *Brit. B.*, VIII, p. 150).

DISTRIBUTION.—*Abroad*.—Breeds in west Siberia. Winters in Mediterranean countries, as far west as south France and Algeria and in Egypt. Found on passage in Russia, Hungary and Austria, east to Persia and Transcaspia; occasionally further west, four times in Germany, once Heligoland, twice Belgium, five times Holland, in north France and Switzerland.

Genus CAPELLA Frenzel.*

CAPELLA Frenzel, *Beschr. Vög. u. Eyer Wittenberg*, p. 28, and in list (1801)—Type: *Capella caelestis*=*gallinago*. *Gallinago* Koch, 1816.

Bill very long, slender, upper mandible somewhat soft before the tip and flexible. Eyes large and high up in skull, but less so than in *Scolopax*. Ear under middle of eye (in most other birds further back). Legs short, tarsus about one-fourth length of wing, in front and behind scutellated; lower part of tibia bare. Toes long and slender, without webs. Hind toe well developed with slender claw projecting beyond toe. Wings long and pointed, first developed primary longest. Tail more or less rounded, middle

* Unfortunately *Capella*, 1801 has priority over *Gallinago*, 1816.—E.H.

rectrices normal, lateral ones in a number of species more or less narrow and stiff, number of rectrices 14-26. In all Continents, in Australia only winter visitors.

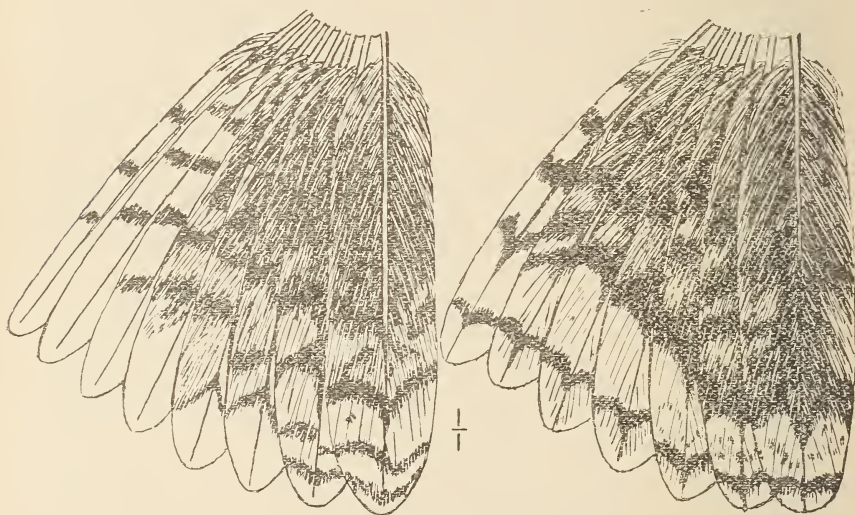
CAPELLA MEDIA

428. *Capella media* (Lath.)—THE GREAT SNIPE.

SCOLOPAX MEDIA Latham, Gen. Syn. Suppl., i, p. 292 (1787—Lancashire, England).

Gallinago major (Gmelin), Yarrell, III, p. 336; Saunders, p. 571.

DESCRIPTION.—*Adult male and female. Winter.*—Like Common Snipe but feathers of parallel bands on crown scarcely spotted; mantle and scapulars darker, feathers with fewer buff markings, buff edges to outer webs of feathers of sides of mantle and scapulars narrower and paler; irregular barrings on breast less concealed and more pronounced; sides of body and flanks more broadly



Half the tails of the Great Snipe (left) and the Common Snipe (right).

barred; tail-feathers: central pair as in Common Snipe, next two pairs same but more broadly tipped white and with black basal portion less extensive, 4th and 5th pairs with basal halves more or less black-brown or olive-brown and terminal half white and more or less irregularly marked black-brown and suffused pink-cinnamon, three outer pairs white with olive-brown bases and broad bars of same far apart on outer webs, not extending beyond two-thirds or half total length of feather and often not so far; primaries as in Common Snipe but 2nd with outer web mottled or margined with brownish-white; primary and greater coverts broadly tipped

white; median coverts broadly tipped white or white suffused pale pink-buff. This plumage is acquired by complete moult in autumn. *Summer*.—The body-feathers (not lowest scapulars and sometimes apparently not feathers of back and rump), tail, some innermost secondaries and coverts, most median and some lesser coverts are moulted Feb. to May, but not rest of wings. Coloration as winter but brown-black feathers of bands on head notched, spotted or edged at sides pink-cinnamon, feathers of mantle nearly all plentifully edged and notched pink-buff, mostly with U- or V-shaped markings of same, feathers of rump more broadly edged and notched pink-buff, sides of throat with less pronounced olive-brown streaks; rest of plumage as winter.

Nestling.—Fore-head pale cinnamon-buff; from base of upper mandible, a black median line; from above centre of eye extending and nearly meeting on hinder crown an irregular black line; three irregular black streaks often ill-defined down centre of crown; rest of crown intermixed cinnamon-buff and cream; nape cinnamon-buff, down sooty-black at base; upper-parts variegated black, ochraceous-tawny and cinnamon-buff with numerous cream dots; eye-stripe and patch below eye white or light buff; a black line often incomplete from lores to eye; black moustachial streak indicated; remaining under-parts pale cinnamon-buff, still paler on belly.

Juvenile.—Like adult summer but feathers of mantle and scapulars notched, barred or irregularly marked and tipped cinnamon, not pink-buff, feathers of sides of mantle and scapulars with narrower margins usually of paler pink-buff on outer webs; 6th and 7th pairs of tail-feathers tipped pink-cinnamon and barred same at base, in some with subterminal olive-brown bars, two next pairs (4th and 5th) same but with white tips more or less suffused pink-cinnamon, three outer pairs white with several olive-brown bars extending to tip; wing as adult but greater coverts usually with narrower white tips; median coverts more narrowly tipped light buff or white.

First winter. Male.—As adult and difficult to distinguish when juvenile tail is moulted. Worn and faded juvenile coverts amongst new wing-coverts as compared with uniformly fresh wing-coverts of adult in early winter, in most cases indicate a first winter bird. The juvenile body-feathers, not lowest scapulars, apparently usually tail, some innermost secondaries and coverts, some median and lesser coverts are moulted in autumn.

Measurements and structure.—♂ wing 140–150 mm., tail 51–59, tarsus 33–37, bill from feathers 57–63 (12 measured). ♀ wing 139–149, bill 64–69. Primaries: 1st minute, 2nd longest, 3rd equal or 2–5 mm. shorter, 4th 5–9 shorter, 5th 12–19 shorter, 6th 20–25 shorter. Longest inner secondary between 3rd and 6th primaries. Tail with 16 and sometimes 18 feathers, fan-shaped, outer feathers considerably narrower and more tapering than central ones, three

outer pairs varying in breadth individually. Bill long, straight, tapering ; nostrils basal, nasal groove and groove in lower mandible extending nearly to tip ; terminal portion of bill in skins covered with pit-like depressions, upper mandible grooved at tip on under-side into which lower mandible fits. Tibia exposed for a short distance only, reticulated in front, scutellated behind, tarsus scutellated in front and behind, reticulated immediately below tibio-tarsal joint, and immediately above foot. Four toes, not webbed, middle one dilated on inner side.

Soft parts.—Bill dark brown, pale yellowish at base ; legs and feet greyish-green or very pale yellowish ; iris dark hazel.

CHARACTERS.—Distinguished from Jack Snipe by large size and different shape of tail and tail-feathers.

FIELD-CHARACTERS.—Met with in family parties in early autumn, but later on generally solitary. Haunts as a rule dryer situations than Common Snipe, being found as frequently on outskirts of birch-woods or on dry moss under birch or willow-scrub as in marshes. In fine weather sits very close. On being flushed goes off usually to no great distance with slower and more direct flight, without twistings of Common Snipe, compared with which it is a larger, heavier and darker bird on the wing, with a conspicuous amount of white in tail. Generally silent, it sometimes utters a monosyllabic, guttural, croak on rising (N.F.T.).

BREEDING-HABITS.—Nests in rather marshy ground, sometimes where there are low bushes and scattered trees. *Nest.*—Depression in mossy ground, sometimes with bents as lining. *Eggs.*—Usually 4, pyriform, pale greenish-grey to stone-buff, handsomely spotted with deep vandyke-brown and ashy-grey shellmarks. Average of 100 eggs, 45.3×31.8 . Max. : 48.8×31.9 and 46.2×33.3 . Min. : 41.2×31.7 and 46.5×29.5 mm. *Breeding-season.*—Latter part May and early June, but later in north. *Incubation.*—Apparently by female but information defective. Period not definitely known, probably under-estimated by Naumann (17-18 days). Single brooded.

FOOD.—Largely earthworms : also small snails and slugs ; also insects, including coleoptera, larvæ of diptera and Phryganeidæ and many aquatic species.

DISTRIBUTION.—*British Isles.*—Rare passage-migrant (first half May and end July to mid-Nov.). Probably annual autumn in small numbers east and south England, vagrant elsewhere ; about forty Scotland and fourteen Ireland. Very rare in spring.

DISTRIBUTION.—*Abroad.*—Breeds in Scandinavia from Tromsø south to Denmark (Schleswig), Russia and west Siberia, a few parts of Germany and as far south as Bessarabia. Formerly probably Holland. On migration passes through Europe and westernmost Asia (Caucasus, Persia, Turkestan), winters in Africa from north to Cape Province and Natal.

CAPELLA GALLINAGO

429. *Capella gallinago gallinago* (L.)—THE COMMON SNIPE.

SCOLOPAX GALLINAGO Linnaeus, Syst. Nat., ed. x, i, p. 147 (1758 Europe. Restricted typical locality : Sweden).

Scolopax Sabini Vigors, Trans. Linn. Soc., London, xiv, p. 557 and plate (1825—Ireland. Dark variety, described as having twelve rectrices).

Gallinago scolopacina Gould, B. Great Britain, iv, pl. 79.

Gallinago caelestis (Frenzel), Yarrell, iii, p. 342 ; Saunders, p. 573.

DESCRIPTION.—*Adult male and female.* *Winter.*—From base of upper mandible to hinder crown, two brown-black bands broadening out on crown, feathers mostly notched or spotted at sides pink-cinnamon ; separating these bands a narrow mesial buff streak ; nape light pink-cinnamon or pink-buff, narrowly streaked black-brown ; mantle and scapulars black tinged greenish, feathers with pale olive-brown bases and irregularly notched, spotted, barred and edged tawny, pink-cinnamon, or pink-buff, scapulars streaked same, feathers of sides of mantle and scapulars with broad borders of pinkish or lightest buff on outer webs ; back and rump olive-brown, feathers tipped white, those bordering upper tail-coverts tipped and barred pinkish-buff ; upper tail-coverts pink-buff or pink-cinnamon barred brown-black, longer ones tipped white ; a broad pink-buff eye-stripe, some feathers spotted olive-brown ; an olive-brown streak from lores to eye, some feathers tipped pink-buff ; ear-coverts heavily spotted olive-brown forming a streak below eye ; chin and throat pale pink-buff or white ; cheeks and sides of neck light pink-cinnamon or pink-buff, narrowly streaked black-brown ; fore-neck, breast and sides of belly pink-buff, spotted, streaked or with V-shaped bars of pale olive-brown, more or less concealed and sometimes tending to form an irregular olive-brown streak on either side of throat ; flanks white, more or less suffused pink-buff and broadly barred olive-brown ; belly and vent white ; under tail-coverts light pink-cinnamon or pink-buff with central streaks and irregular markings of olive-brown ; axillaries and under wing-coverts white barred olive-brown, barring varying individually, in some axillaries and under wing-coverts practically white ; tail-feathers : two central pairs black for about three-fourths of their length, terminal fourth pink-cinnamon, shading sometimes to pink-buff at tip, more or less freckled olive-brown and subterminally marked same, 5th to 2nd pair similar but bases browner and decreasing in extent in outer ones, pink-cinnamon tips more extensive and shading to white at tip, 1st (outermost) pair white more or less suffused pink-buff and barred black-brown or olive-brown ; primaries and coverts dark brown, paler on inner webs, very faintly tipped white, 2nd with outer web more or less white ; secondaries dark brown broadly tipped white and more or less mottled white or light buff on inner webs, 11th with outer web mottled black-brown and sometimes shaded light buff ; innermost secondaries and coverts black-brown, paler on

inner webs, irregularly barred and mottled pink-cinnamon, pink-buff or tawny and edged light buff, coverts tipped light buff or white; greater coverts dark brown tipped white or buff, inner ones irregularly marked buff and some faintly edged same; median and lesser coverts olive-brown or black-brown tipped pinkish or whitish-buff, median coverts (except innermost) irregularly barred and marked same. This plumage is acquired by complete moult July to Oct. N.B.—There is considerable individual variation in coloration; the so-called Sabine's Snipe is merely a melanistic variety. *Summer*.—The body-feathers, tail, innermost secondaries and coverts, most median and lesser coverts are moulted Jan. to May but not rest of wings. Coloration as winter.

Nestling (Plate 9).—Black-brown median line from base of bill to fore-head, intersected on fore-head by a narrow white line; an irregular narrow line on either side of crown; nape tawny, down sooty-black at base, some tipped white; crown and rest of upper-parts tawny variegated with black, some down tipped white; eye-stripe tawny; a black-brown line from side of upper mandible to eye, another often indistinct from lower mandible to cheeks; a whitish streak below eye; cheeks ochraceous-tawny; chin and two irregular streaks on throat blackish; fore-neck tawny, down sooty-black at base; rest of under-parts ochraceous-tawny, down greyish-brown at base.

Juvenile.—Like adult but feathers of sides of mantle and scapulars with narrower, usually paler and sometimes almost white edges to outer webs.

First winter.—As adult and not to be distinguished with certainty; wing-coverts and wing-quills usually more worn than in adult. The body-feathers, not all scapulars, sometimes tail-feathers, innermost secondaries and coverts, usually some median and lesser coverts but not rest of wings are moulted Aug. to Jan.

Measurements and structure.—♂ wing 128–138 mm., tail 53–61, tarsus 29–33, bill from feathers 60–68 (12 measured). ♀ wing 130–140, bill 65–70. Primaries: 1st minute, 2nd longest, 3rd equal or 2–4 mm. shorter, 4th 5–8 shorter, 5th 11–15 shorter, 6th 19–23 shorter. Longest inner secondary between 3rd and 5th primaries. Tail fan-shape, 14 feathers, sometimes only 12, sometimes 16 or 18; feathers of moderate breadth, rather obtuse at tip, outer pair with outer web very narrow; juvenile has tail-feathers somewhat narrower. Other structure as in Great Snipe.

Soft parts.—Bill pale reddish-brown at base, tip dark brown; legs and feet dull, pale greenish; iris brown.

CHARACTERS AND ALLIED FORMS.—For differences of *C. g. faeroeensis* see under that form; *C. g. raddei* (E. Siberia) requires confirmation; *C. g. nigripennis* (Africa) has upper-parts almost black; *C. g. wilsoni* (America) has usually 16 tail-feathers and bill is usually shorter. For distinctions of Great and Jack Snipe see under those species. Black variegated with buff and pink-cinnamon upper-parts and long straight bill distinguish it from allied species.

FIELD-CHARACTERS.—Snipe are unique in their longitudinally striped plumage, which conceals them effectively among withered herbage, but, coupled with their very long, straight bills, identifies them at once in the open. Its greater size and broad pale stripe down middle of crown differentiates Common from Jack Snipe. Frequents swamps and pools, wet meadows, peat-mosses and rushy upland fields. When flushed zig-zags rapidly close to ground for a few yards, with a hoarse "scape" of alarm, then rises and goes clear away. In breeding-season flies in wide circles at considerable height above nesting-place uttering deliberate and sustained "chip-per, chip-per," which alternates with a far-reaching bleating sound as bird plunges downwards for several feet, two outermost tail-feathers—by which the sound is produced—standing out clearly from the others. A loud, continuous "tchik-tchak, tchik-tchak" expresses alarm when young are in danger.

BREEDING-HABITS.—Haunts marshy meadows, wet spots on rough pasture, moors, etc. *Nest.*—Hollow in tuft of grass, rushes or even in heather, lined with grasses. *Eggs.*—Normally 5, pyriform, varying from pale greenish or bluish to ochreous or pale brown, blotched and spotted with various shades of sepia and ashy shell-marks. These markings often show signs of rotation in the oviduct. Average of 100 British eggs, 39.4×28.7 . Max.: 42.7×29 and 39.3×30.3 . Min.: 35×28.4 and 36.3×26.7 mm. *Breeding-season.*—Occasionally in March, but more usually from April onward. Late nests may be met with in July and Aug. *Incubation.*—Probably by female only. Period: 19–19½ days (Ogilvie); 20th day from laying of last egg (Evans). Possibly late layings may sometimes be second broods.

FOOD.—Very largely worms, especially dew worms and small red species; also insects; coleoptera (*Staphylinidæ*, *Bembidium*, *Amara*, etc.); diptera and their larvæ (*Tipulidæ*, etc.); lepidoptera (moths), larvæ of Phryganeidæ and cuckoo-spit (*Pytelus spumarius*); mollusca, both land and fresh water (*Helix*, *Planorbis*, etc.) etc.) and eggs of snails; also woodlice; vegetable matter found in stomach includes grass, grain and seeds of *Ranunculus*, *Carex*, *Glyceria*, *Rumex*, etc.

DISTRIBUTION.—*British Isles.*—Resident; to what extent breeding birds are migrant is uncertain but ringing results indicate certain amount of wandering within the country and passage-movements between Gt. Britain and Ireland. Early autumn movements (end July and Aug.) occasionally reported are probably those of our breeding birds. Passage-migrant (1st week March to second week May and early Sept. (early dates, Aug. 4th, 1911, 5th, 1912, Fair Isle) to end Nov.) and winter-visitor. Breeds locally suitable places throughout but in some southern English counties rarely. Abundant on passage and in winter, when weather-movements are frequent.

DISTRIBUTION.—*Abroad*.—Breeds in Scandinavia and Central Europe to Pyrenees, Alpine Regions, north Italy, Montenegro, western Asia to Siberia. Migrates to Mediterranean, Madeira, Canaries, Azores, N. Africa into Sahara, once Gambia, in E. Africa to Mombasa, once Seychelles ; in great numbers in India in winter, north to Malayan Is. Replaced by allied subspecies in Iceland and Færoes, in tropical Africa, in N. America and by a somewhat doubtful one requiring further study (*C. g. raddei*) in north-east Asia, to which would belong migrants in Japan, Borneo, Philippines, east China. (Reported by error from Nyassaland, one in British Museum labelled Batjan probably also erroneous, not mentioned by Gray in list of collection.)

430. *Capella gallinago faeroeensis* (Brehm).—THE FÆROE SNIPE.

TELMATIAS FAEROEENSIS Brehm, Handb. Naturg. Vög. Deutschl., p. 617 (1831-Færoe).

Gallinago russata Gould, B. Great Britain, iv, text to Plate 79 (1863-Dartmoor).

DESCRIPTION.—*Adult male and female. Winter and summer*.—Nape and edges to feathers of mantle and scapulars redder than in *C. g. gallinago* ; mantle, scapulars and innermost secondaries more plentifully vermiculated redder tawny ; black-brown streaks on sides of throat hardly indicated or absent ; upper-breast and sides of body rather deeper pinkish-buff ; flanks pinkish-buff barred black-brown.

Nestling.—(Not examined.)

Juvenile.—Like adult but rufous stripes on mantle and scapulars slightly narrower but not paler ; differing markedly from juvenile *C. g. gallinago* by its much more rufous upper-parts, upper-breast and wing-coverts.

Measurements and structure.—♂ wing 132-143 mm., bill from feathers 60-70 (7 measured). ♀ wing 133-144, bill 66-73 (6 measured). Other structure as in *C. g. gallinago*.

DISTRIBUTION.—*British Isles*.—Winter-visitor. Specimens have been examined from Donegal, Mayo, Devon, Cornwall, Tiree, and Ross-shire, dated from August 24 to Feb. 6.

DISTRIBUTION.—*Abroad*.—Færoes and Iceland.

Genus LYMNOCRYPTES Kaup

LYMNOCRYPTES Kaup, Skizz. Entw. Gesch. und nat. Syst., p. 118 (1829—Monotype *L. gallinula* = *minima*).

Generally similar to *Capella*, but differs as follows : Considerably smaller ; outer (not elongated) secondaries not rounded but pointed ; tail cuneate, middle rectrices much longer than rest and pointed ; number of rectrices only 12 ; bill at base comparatively much higher, in middle very narrow. Sternum on each side with two incisures, syrinx very different and other anatomical distinctions. Metallic green stripes on back. One species only.

LYMNOCRYPTES MINIMUS *

431. *Lymnocyptes minimus* (Brünn.)—THE JACK SNIPE.

SCOLOPAX MINIMA Brünnich, Orn. Bor., p. 49 (1764—Christiansøe and ex Brisson, Orn., v, p. 303, pl. 26, Fig. 2).

Scolopax Gallinula Linnaeus, Syst. Nat., ed. xii, i, p. 244 (1766—Europe).

Gallinago gallinula (Linnaeus), Yarrell, III, p. 351; Saunders, p. 575.

Lymnocyptes gallinula (L.), Hand-List (1912), p. 190.

DESCRIPTION.—*Adult male and female. Winter.*—A narrow median black line from base of upper mandible to crown where it expands into a broad band extending on to nape, sides of feathers edged pink-cinnamon; above eye, from base of upper mandible to nape a light buff band, feathers above eye edged blackish forming an eye-stripe; feathers of nape and upper-mantle umber-brown narrowly tipped white and with irregular black-brown markings; feathers of mantle and scapulars black glossed purple and green, mantle-feathers mostly spotted and marked cinnamon or pink-cinnamon on inner webs, those of sides of mantle and scapulars with broad margins of warm buff on outer webs, scapulars with irregular streaks or bars of cinnamon or pink-cinnamon and mostly narrowly tipped white; lowest scapulars olive-brown faintly tipped white, sometimes mottled buff; back and rump black, glossed violet-purple, feathers narrowly tipped white; upper tail-coverts black or brown-black edged warm buff or pink-cinnamon, some spotted same and faintly tipped white; a black-brown streak (feathers edged pink-cinnamon) from lores to eye, another from lower mandible through ear-coverts to nape; patch below eye white streaked black-brown; under-parts white and except for belly, vent and under tail-coverts, more or less suffused pink-buff, sides of neck streaked brown-black, fore-neck and breast mostly spotted same, giving a streaked appearance, feathers of sides of belly with large black-brown spots, flanks irregularly marked or mottled dusky, under tail-coverts sometimes streaked centrally warm buff or dusky-brown; axillaries white, sometimes shaded or spotted dusky; under wing-coverts white with dusky bases; tail-feathers dusky-brown edged at sides and some irregularly marked pink-buff, two central pairs darker and with broader



Half the tail of the Jack Snipe
(*Lymnocyptes minimus*).

* Unfortunately Brünnich's name, which has been overlooked, antedates Linnaeus's *gallinula*.—E.H.

edges ; primaries and coverts dark brown faintly glossed green, paler on inner webs, inner ones tipped white, 2nd with outer web mostly brownish-white ; secondaries dusky-brown broadly tipped white, innermost with outer webs pink-cinnamon or cinnamon, irregularly barred, marked or freckled black and narrowly tipped white ; greater coverts dark olive-brown narrowly tipped white, innermost cinnamon or pink-cinnamon barred black towards tip, some faintly edged pink-cinnamon ; median coverts black-brown narrowly tipped white and with a subterminal border (sometimes with a bar or spot) of pink-buff or pink-cinnamon ; innermost median and lesser coverts dusky-brown tipped white ; lesser coverts same but light edges narrower. This plumage is acquired by complete moult July to Oct. *Summer*.—The body-feathers, not lowest scapulars, tail, some innermost secondaries and coverts, some median and lesser coverts but not rest of wings are moulted Jan. to May. Coloration as winter.

Nestling.—(Not examined.)

Juvenile.—(Not examined.)

First winter.—Apparently indistinguishable from adult ; moult presumably as in Common Snipe.

Measurements and structure.—♂ wing 108–117 mm., tail 46–51, tarsus 23–25, bill from feathers 39–41 (12 measured). ♀ wing 107–115, bill 40–43. Primaries : 1st minute, 2nd longest, 3rd equal or 2–5 mm. shorter, 4th 6–10 shorter, 5th 11–14 shorter, 6th 17–21 shorter. Longest inner secondary between 3rd and 6th primaries. Tail wedge-shaped, 12 pointed feathers. Bill proportionately shorter and stouter than in Great Snipe, higher at base, narrowing suddenly and depressed towards tip. Other structure as in Great Snipe.

Soft parts.—Bill pale yellowish-flesh, tip black, sides and base of under mandible pale ashy-grey ; legs and feet light greenish blue-grey ; iris dark brown.

CHARACTERS.—No subspecies. Small size, wedge-shaped tail and upper-parts glossed green and purple distinguish this species from Common Snipe.

FIELD-CHARACTERS.—Smaller than Common Snipe, with relatively shorter bill. Plumage has more metallic gloss and lacks broad pale stripe on crown. Solitary, whereas Common Snipe is more or less gregarious, occurring at times in “ wisps ” of a dozen or more. Reluctant to rise, does not zig-zag, and usually pitches after a flight of a few yards. Very silent during its sojourn in this country, but the love-song uttered in flight above breeding-grounds was likened by Wolley to distant canter of a horse on a hard road.

BREEDING-HABITS.—Breeds in marshes and high-lying bogs of northern Europe and Asia. *Nest*.—Hollow in dry spot surrounded by wet ground, lined with a little grass, *Equisetum* or leaves of dwarf birch. *Eggs*.—Normally 4, large, pyriform, somewhat browner on average than those of Common Snipe and more evenly

marked with smaller spots but varying on similar lines. Average of 136 eggs, 38.6×27.4 . Max. : 44.5×28.5 and 40×30 . Min. : 35×27 and 38×25.5 mm. *Breeding-season*.—From early June, through July and even early in Aug. *Incubation*.—No definite information. Probably single brooded.

FOOD.—Worms, insects (including small coleoptera, diptera and various larvæ), mollusca (*Helix*, *Tellina*, *Pisidium*, etc.) and some vegetable matter (grass, plant fibre, etc.).

DISTRIBUTION. — *British Isles*.—Passage-migrant (end March to 3rd week May and mid-Sept. (early dates Aug. 12, 1910, Norfolk, Aug. 20, 1910, Essex) to end Nov.) and winter-visitor. Generally distributed but decidedly local. No authentic case of nesting. Weather-movements (Dec. to March), frequent.

DISTRIBUTION.—*Abroad*.—Breeds in Lapland and Finland to Germany (very rare and local Baltic republics, rare and irregular north Germany, also Bavaria) north Poland, Russia, Siberia to Kolyma, but not in northernmost latitudes. On migration and in winter to Canaries, N. Africa from Morocco to Egypt, south to Blue Nile, Lakes Nakuru and Naivasha, western Asia to India and Ceylon, Burmah (rare), China (rare), Formosa and Japan. Also casual Færoes and Madeira.

Genus SCOLOPAX L.

SCOLOPAX Linnæus, Syst. Nat., ed. x, i, p. 145 (1758—Type by subsequent designation by Gray, 1840, *S. rusticola*, also by tautonymy).

Bill as in *Capella* but somewhat stouter, but upper mandible similarly soft and flexible before tip. Eye very large and placed still higher and further back in skull, upper and hind part of skull being much reduced. Ear under anterior edge of eye. Wings much shorter and less pointed than in *Capella*. Tail short and rounded, middle rectrices a little recurved. 12 rectrices. Plumage soft and thick, body-feathers shorter and closer than in *Capella*. Legs still shorter and stouter than in latter, tibia entirely feathered. Toes long, without webs, hind toe present, but very short, its claw not projecting beyond toe. 1 species only, one subspecies recognized.

SCOLOPAX RUSTICOLA

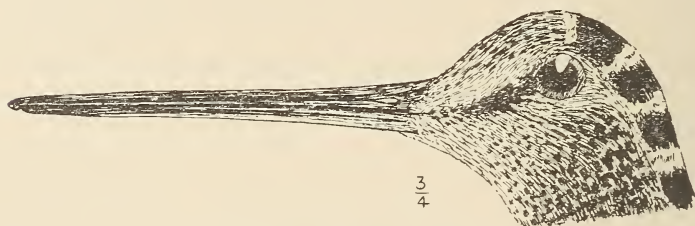
432. *Scolopax rusticola rusticola* L.—THE WOODCOCK.

SCOLOPAX RUSTICOLA Linnæus, Syst. Nat., ed. x, i, p. 146 (1758—Europe. Restricted typical locality : Sweden).

Scolopax rusticola Linnæus, Yarrell, III, p. 320 ; Saunders, p. 569.

DESCRIPTION.—*Adult male and female. Winter*.—Fore-head and fore-part of crown to above eye pink-buff, feathers with more or less concealed markings of black-brown ; a narrow black-brown median streak from base of culmen to crown ; rest of crown and upper-

part of nape black with two or three irregular bars of orange-cinnamon or buff; rest of nape pink-buff, feathers barred black-brown; mantle, scapulars, innermost secondaries and coverts orange-cinnamon, variegated with black, buff or greyish-olive spots and patches or tips and more or less freckled, barred or marked black; back, rump and upper tail-coverts orange-cinnamon, feathers barred and irregularly mottled black, some tail-coverts tipped pink-buff; a broad sepia streak from lores to eye; ear-coverts pink-buff tipped black; line over eye, cheeks and sides of neck pink-buff more or less spotted sepia; chin and upper-part of throat white sometimes spotted sepia; feathers of sides of lower-throat and fore-neck pink-cinnamon broadly barred black-brown, those of sides of breast orange-cinnamon similarly barred; rest of under-parts (except tail-coverts) pink-buff or light buff, feathers with narrow, wavy sepia or dusky-brown bars, broader on sides



The Woodcock (*Scolopax r. rusticola*).

of belly and flanks; under tail-coverts pink-buff irregularly barred or streaked sepia, many with deep white tips; axillaries and under wing-coverts barred pink-buff and dusky-brown; tail-feathers black with deep tips of smoke-grey, which on under-surface are white, all with outer webs notched orange-cinnamon; primaries and their coverts and secondaries sepia or black-brown paler on inner webs, tipped light or pink-buff, 2nd primary with outer web bordered (sometimes notched) light buff, inner web notched pink-buff, remaining primaries, primary-coverts and secondaries notched pink-cinnamon or pink-buff on both webs; innermost secondaries and coverts as scapulars; greater and outer median coverts black-brown barred or notched and tipped orange-cinnamon and pink-buff, some with outer webs orange-cinnamon, freckled and vermiculated greyish-olive; rest of median coverts much as mantle but without black patches or tips, a patch towards centre of wing broadly tipped pink-buff or greyish-olive; lesser coverts black, tipped, notched and barred orange-cinnamon. This plumage is acquired by complete moult July to Dec. N.B.—There is considerable individual variation in colour and markings. *Summer*.—Feathers of head and neck all round, sometimes a few feathers of mantle and scapulars, some upper tail-coverts, a few scattered feathers on breast, sometimes some tail-feathers, sometimes some

innermost secondaries and coverts, some median and lesser coverts, but not wings, are moulted Feb. to May. Coloration as winter.

Nestling (Plate 9).—Fore-head and broad band over eye to nape light ochraceous-buff, a russet median streak from base of upper mandible to crown; crown russet intermixed with light ochraceous-buff, centre of nape russet, sides light ochraceous-buff; an irregular and interrupted russet band from nape to uropygial tuft, another across wing; rest of upper-parts and sides of body with irregular bands and patches of ochraceous-buff and russet; from base of upper mandible to eye a broad black-brown streak; a small patch of same behind eye; a patch of russet on lower-throat; rest of under-parts light ochraceous-buff.

Juvenile.—As adult but easily recognized by looser and softer structure of feathers; feathers of fore-part of crown have usually more pronounced dusky-brown tips and appear more spotted and marked than in adult; black of hinder crown duller and less extensive; buff bars across hinder crown narrower and less pronounced; feathers of nape with dusky-brown bases more or less exposed; feathers of mantle like adult but with extensive ashy-brown bases and barred or marked pink-buff, pink-cinnamon or orange-cinnamon and in some black mantle-feathers and scapulars with smaller black and pink-buff tips and patches than in adult; back and rump ash-brown, feathers broadly tipped orange-cinnamon and more or less barred black-brown; upper tail-coverts less distinctly barred and without buff tips; under-parts with narrower and paler bars; under tail-coverts pink-buff with irregular markings and barrings of dusky-brown and without white tips; central pair of tail-feathers as adult but streaked as well as notched pinkish or orange-cinnamon, remainder black usually for two-thirds of their length and tipped pink-cinnamon barred black, shading sometimes to a narrow tip of smoke-grey, black portion with outer web barred and mottled to shaft, or streaked pink-cinnamon (sometimes black continuous to smoke-grey tip), tail-feathers never with such broad or such pure white tips on under surface; wing as adult but coverts often with imperfectly concealed ashy-brown bases, more uniformly barred dusky-black and orange-cinnamon, not so variegated as in adult, only a few median coverts towards centre tipped pink-buff.

First winter.—As adult and not to be distinguished with certainty; remiges and some wing-coverts usually appear more worn. The juvenile body-feathers, tail, innermost secondaries and coverts, apparently all or most greater, median and lesser coverts are moulted in autumn but not rest of wings.

Measurements and structure.—♂ wing 191–205 mm., tail 71–82, tarsus 34–38, bill from feathers 68–75 (12 measured). ♀ wing 191–208, bill 67–80. Primaries: 1st minute, 2nd longest, 3rd equal or 2–5 mm. shorter, 4th 6–10 shorter, 5th 13–20 shorter, 6th 23–30 shorter. Longest inner secondary between 4th and 7th primaries. Tail short and rounded, 12 feathers rather blunt at tip. Bill long, straight, tapering, inconspicuously pitted terminally, grooves

extending nearly to tip, nasal groove filled with a membrane at base, nostrils basal. Tibia feathered to joint, tarsus scutellated anteriorly, reticulated laterally and posteriorly. Four toes, not webbed, middle one dilated on inner side.

Soft parts.—Bill dull flesh-colour, dark brown towards tip; legs and feet dull greyish flesh-colour, in some tinged yellowish; iris black-brown.

CHARACTERS AND ALLIED FORMS.—*S. r. mira* (Riu-Kiu Islands) has upper- and under-parts darker. Distinguished by long, straight bill and variegated plumage.

FIELD-CHARACTERS.—A woodland bird, particularly partial to damp oak woods; very difficult to see on ground owing to its protective coloration, but its size, warm brown tints, rounded wings and long bill are unmistakable as it rises, twisting and turning like a Snipe. Leaves shelter of woods in evening to feed in marshes and spongy places about springs. At dusk in spring and summer Woodcock fly about woods and adjacent open spaces at a height of some thirty feet with a slow, flapping and curiously owl-like action. During this "roding" they utter a croaking "guroo-guroo" associated with a sharp, chirping "ittie, ittie." Barks and hisses when young are in danger.

BREEDING-HABITS.—Breeds in woodlands. *Nest*.—Hollow in moss sometimes at foot of forest tree or sheltered by undergrowth, lined dead leaves, etc. *Eggs*.—Normally 4, occasionally 5, while there are records of 6 and even 8 eggs in one nest; generally pyriform, yellowish-white, spotted and blotched with various shades of warm brown and ashy shell-marks. White variety also on record. Average of 100 eggs, 43.8×33.6 . Max.: 49×34.8 and 44.9×36.4 . Min.: 40.2×34 and 43.1×31.6 mm. *Breeding-season*.—From mid-March onward through April to June and even July. *Incubation*.—By female only. Period 20 days (Evans) to 21 days. Two broods often reared.

FOOD.—Earthworms; also insects (coleoptera and their larvæ, orthoptera (*Forficula*); larvæ of lepidoptera, etc.); small mollusca, etc. Grains of maize recorded on one occasion in stomach, and mussels (*Mytilus*), also said to be eaten, as well as small crustacea.

DISTRIBUTION.—*British Isles*.—Resident; ringing records indicate that some English and Scottish bred birds are sedentary while others migrate in autumn, chiefly to Ireland or southward, but occasionally even northward and sometimes across Channel (two French recoveries), while one bred in Ireland was found in Portugal. Breeds most parts and increasingly; in some years, as 1902, 1904 and 1908 in parts of Scotland in unusual numbers. Passage-migrant (mid-March to early May and fourth week Sept. to first week Dec.) and winter-visitor. Weather-movements (Dec.-Feb.) frequent.

DISTRIBUTION.—*Abroad*.—Breeds in Europe from Scandinavia and north Russia to Pyrenees, Alps and north Italy, Hungary and northern part of Balkan peninsula, Madeira, Canaries and Azores;

north Asia to Kashmir and Himalayas, east to Ussuri and Japan. Northern birds are migrants, wintering in Mediterranean countries south to Atlas mountains and Egypt; in south Persia, India to Ceylon, China and south Japan. Casual Faeroes, Spitsbergen, Greenland and eastern U.S.A. (from Newfoundland) to Virginia. Represented by a very distinct subspecies on Amami, Loo Choo or Riu Kiu Is., south Japan.

ORDER LARI (LARIFORMES).

Comprises Gulls, Terns, and Skuas; latter rather different from other two groups and entitled to subfamily rank, sometimes even raised to a family, *Stercorariidæ*. Distinction of Terns and Gulls as families or subfamilies not considered necessary. Palate schizognathous, nasals slit-like, schizorhinal (less typical in *Stercorariinæ*). Basipterygoid processes absent. Cervical vertebrae 15, sternum strongly keeled. Oil-gland present and tufted. Plumage rich and soft, aftershafts present, 10 developed primaries, wings aquintocubital. Rectrices 12. Wings long and pointed, flight wonderfully light and sustained. Middle toe longer than outer, three front toes connected by webs, therefore good swimmers. Plumage of adults also with rich down, young covered with thick and soft down, nidifugous.

FAMILY LARIDÆ.

Characters of Order *Lari*.

Key to genera of Order LARI.

1	{ Tail square	2	
	{ Middle rectrices longer than lateral	4	
	{ Tail forked	5	
2	{ Hind toe developed, with claw	3	
	{ No hind toe, only a small knob without claw		<i>Rissa</i>
3	{ Lower part of tibia bare		<i>Larus</i>
	{ Tibia entirely feathered		<i>Pagophila</i>
4	{ Feet rough with very sharp claws, horny covering of upper bill divided into two pieces by sharp, narrow groove, thus basal portion looking like a cere, tip of bill strongly hooked		<i>Stercorarius</i>
	{ Feet more smooth, claws blunt, horny covering of upper bill not divided, tip of bill not strongly hooked		<i>Rhodostethia</i>
5	{ Claws blunt, gonys much less than half bill		<i>Xema</i>
	{ Claws pointed, gonys about half bill	6	
6	{ Tail more than half length of wing, lateral rectrices with very long, narrow tips ("streamers")		<i>Sterna</i>
	{ Tail less than half length of wing, lateral rectrices longer than others, but not with very long, narrow tips ("streamers")	7	
7	{ Bill slenderer, height at base much less than 10 mm.		<i>Chlidonias</i>
	{ Bill stouter, height at base 10 mm. or much more	8	
8	{ Six middle rectrices about equal, bill longer than head, over 50 mm.		<i>Hydroprogne</i>
	{ Six middle rectrices gradually longer, bill not longer than head, under 50 mm.		<i>Gelochelidon</i>

Genus *CHLIDONIAS* Rafin.*

CHLIDONIAS Rafinesque, *Kentucky Gazette*, vol. 36, 1, No. 8, p. 3 (1822—Monotype *C. melanops* = *niger*.)

Legs and feet small, webs between toes deeply incised, tarsus not longer than middle toe without claw. Tarsus reticulated but scutate in front. Hind toe well developed. Tail less than half length of wing and only slightly forked, lateral rectrices not elongated into "streamers." 3 species, two with recognized subspecies.

Key to species of genus CHLIDONIAS (adults only).

- | | | |
|---|--|---|
| 1 | { Underside grey or black 2 | |
| | { Underside white 4 | |
| 2 | { Under wing-coverts black, bend of wing and lesser upper wing-coverts white | <i>C. leucopterus</i> (summer), p. 693 |
| | { Under wing-coverts pale grey or white 3 | |
| 3 | { Sides of head quite grey or black | <i>C. niger</i> (summer), p. 687 |
| | { Sides of head with broad white stripe | <i>C. leucopareius</i> (summer), p. 690 |
| 4 | { With brown spot on sides of jugulum | <i>C. niger</i> (winter), p. 686 |
| | { No brown patch on sides of jugulum | <i>C. leucopterus</i> and <i>leucopareius</i> (winter), pp. 692 and 690 |

CHLIDONIAS NIGER**433. *Chlidonias niger niger* (L.)—THE BLACK TERN.**

STERNA NIGRA Linnæus, *Syst. Nat.*, ed. x, i, p. 137 (1758—Europe.

Restricted typical locality : near Upsala).

Hydrochelidon nigra (Linnæus), Yarrell, III, p. 516 ; Saunders, p. 633.

DESCRIPTION.—*Adult male and female.* *Winter.*—Fore-head and fore-part of crown white ; rest of crown, extending to upper-part of ear-coverts, and nape sooty-black, feathers, when fresh, narrowly tipped white ; lower-neck white joining sides of neck and throat ; rest of upper-parts pale slate-grey, upper-mantle darker, feathers tipped paler ; upper tail-coverts paler, tipped hoary ; in front of eye, small black patch, otherwise lores and sides of head, chin, throat ; and all under-parts white with small patch of dark slate on each side of upper-breast ; axillaries and under wing-coverts pale ash-

* Rhoads, *Auk*, 1912, p. 197, has shown that in the *Kentucky Gazette*, a newspaper, vol. 36, 1822, 1, No. 8, p. 3, Rafinesque published a generic name, *Chlidonias*, for a Tern. The objections that it was published in a newspaper and that it was preoccupied by *Chlidonia* (without s) are not valid, but I considered that the name could be rejected because the bird was described as having no hind toe, and there is no mention of the white nape-band, and the name "*melanops*" was suspicious, since the "*face*" is white and not black. There is, however, no doubt that the author described some Tern, and the description of the webs leaves no doubt that he meant the present genus. We, therefore, look upon the statement of only three toes as an error, (errors, unfortunately occur in many descriptions), and as *Chlidonias* antedates *Hydrochelidon*, it must be used.—E.H.

grey; tail-feathers as upper-parts, very narrowly fringed hoary, outer web of outermost feathers hoary; primaries: outer webs and tips pearl-grey (becoming dark slate when worn), inner webs darker but inner edge very narrowly fringed whitish and basal inner part ash-grey extending towards tip in wedge-shape, shafts dark brown at tips otherwise brownish-white but darker when freshly grown; secondaries pearl-grey (becoming dark slate when worn), inner portion of inner webs pale grey; innermost secondaries, greater and median coverts pale slate-grey; lesser coverts dark slate with hoary fringes. This plumage is acquired by complete moult commencing sometimes as early as May and June and completed in late autumn or winter. N.B.—Moult in Europe before migration usually confined to body and a few tail-feathers but occasionally inner primaries; moult is completed in winter-quarters but very few winter birds are available. *Summer. Male*.—Material insufficient to give details of moult which includes wings and tail, and is complete by April or May. Those birds with considerable moult in May and June are probably first summer. Fore-head, whole crown to base of neck, bordering on mantle, sides of head and sometimes chin black; rest of upper-parts slate-grey slightly darker than winter; under-parts blackish-slate except under tail-coverts, which are white; axillaries slate-grey; under wing-coverts ash-grey; tail and wings as winter but lesser coverts paler with hoary tinge. *Female*.—Like male on upper-parts but black of crown not extending on to mantle and sides of head dark slate-grey; under-parts dark slate-grey not blackish as in male, chin and throat usually paler grey.

Nestling. (Plate 10).—Completely covered with longish, soft down with fine hair-like tips. Line across fore-head, through lores and broad circle round eyes white; upper-parts rich buff with blotches and rather broken lines of black, small irregular blotches not quite connected on each side of crown, longer streak on back of neck, long streaks on each side of upper-mantle, somewhat broken and irregular on sides of back, streak down centre of rump ending in blotch, irregular blotches on wings; tip of wing greyish-white; apex of chin greyish-white, rest of chin and throat dark buff to sooty-brown; middle of breast greyish white; sides and belly dark buffish-grey. Down is replaced by juvenile feathers, to tips of which it clings.

Juvenile.—Fore-head extending over eye white often washed brown; crown, middle of nape and upper ear-coverts sooty-black,



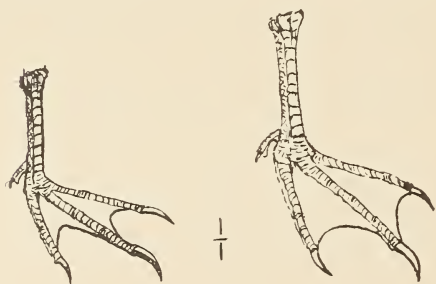
Juvenile of the Black Tern (*Chlidonias n. niger*.)

feathers narrowly edged pale brown to whitish; lower-neck and sides of nape white, feathers often tipped pale brown; upper-

mantle black-brown, feathers very narrowly tipped pale brown and dark grey central portions not entirely concealed; lower-mantle and scapulars showing more grey, with paler brown tips and broader whitish extreme tips; back paler with very faint brownish tips; upper tail-coverts tipped hoary sometimes with brown tinge; under-parts white with dark brown patch on each side of upper-breast; under wing-coverts and axillaries white; tail-feathers as adult but brownish at tips; primaries and secondaries as adult but shafts of primaries usually brown, not white; innermost secondaries and greater and median coverts tipped brown as scapulars, rest of coverts with small brown tips; lesser coverts blackish with very narrow hoary fringes.

First winter.—No certain examples and none in moult examined but appears to become like adult winter, probably by moult of body-feathers and by wear of tips of wing-coverts. *First summer*.—Birds moulting in May and June may be first summer and apparently they do not become so uniformly dark on under-parts as adults.

Measurements and structure.—♂ wing 206–220 mm., tail: outer feather 78–86, central 60–66, depth of fork 14–22, tarsus 15–17, bill from feathers 27–28 (12 measured). ♀ wing 200–218. Primaries: 1st pointed, narrow and about two-thirds primary-coverts, 2nd longest, 3rd 8–15 mm. shorter, 4th 20–32 shorter, 5th 36–50 shorter;



Feet of the Black Tern (left) and the Common Tern (right) to show difference in webbing.

outer web of outer primary very narrow. Outer secondaries shorter than inner primaries, inner ones about as long as 8th or 9th primary, outer webs sloped off at tips. Tail forked, 12 feathers, tips of outer rather sharply pointed, but rounder and shorter in juvenile. About half tibia bare, tarsus slender and short, toes longer, three

front ones connected by deeply concave webs, hind toe free, claws slender, long, and very little curved. Bill slender, much compressed, upper mandible slightly arched and very slightly longer than lower, gonys rather long and gently sloped off to tip, which is very sharp. Nostril basal, slit-like.

Soft parts.—Bill black (juv. brown-black with base of lower mandible dark yellow); legs and feet dark red-brown (juv. deep yellow); iris dark brown.

CHARACTERS AND ALLIED FORMS.—*C. n. surinamensis* (America) is distinctly darker in summer on upper and under-parts and slightly darker on rump in winter and juvenile. Distinguished from other

Terns by deeply incised webs and from other *Chlidonias* in summer by blackish chin and slate-grey lesser wing-coverts, and in juvenile and winter by brown patches on sides of breast.

FIELD-CHARACTERS.—Adult in breeding plumage unlike any other British Tern except the rarer *C. leucopterus*, which has white carpus and tail. Immature Black and White-winged Black Terns probably indistinguishable in the field, but differ from other Terns in having only slightly forked tail. Bulk of food taken in air, or picked deftly from surface of water during flight. Seldom splashes into water, and rarely if ever submerges as other Terns do. Migrants passing through Britain usually silent; a note occasionally heard is a reiterated “teherk,” and cry at breeding places is a shrill “crick, crick.”

BREEDING-HABITS.—Nests in colonies in marshes, lagoons, etc., generally in shallow water. *Nest*.—Floating heap of water-weeds, reeds, etc., more neatly lined than that of Whiskered Tern and with finer materials. *Eggs*.—Usually 3, but sometimes 2 only, ground-colour ochreous or brownish to greenish, heavily blotched with blackish-brown, often in zone round large end, and ashy shellmarks. Average of 100 eggs, 34.8×25.1 . Max.: 40.2×25 and 35×27.4 . Min.: 30.5×24.5 and 32.4×23.5 mm. *Breeding-season*.—From about mid May in Spain and a week or so later in Central Europe, onward. *Incubation*.—Shared by sexes, but chiefly by female (Naumann). Period 14–16 days. Single brooded.

FOOD.—Mainly insects and their larvæ: coleoptera (waterbeetles, *Poecilus*, *Aphodius*, *Amara*, *Donacia*, *Anisoplia*), orthoptera (*Acheta*, *Gomphocerus*), diptera (larvæ of *Tipulidæ*, *Helophila*, etc.), hymenoptera (*Formica rufa*, *F. fusca*, etc.), odonata (*Agrion*, *Libellula*), phryganeidæ (*Limnophilus*), and *Notonecta*. Naumann also includes small fish, tadpoles, and small frogs.

DISTRIBUTION.—*England and Wales*.—Passage-migrant, mid-April to 2nd week June and mid-July to end Sept. (occasionally later). Chiefly south, and east England up to Yorks., where annual but rarer, as it is inland, including midlands. More irregular west coast and Wales. North of Yorks. and Lancs., rare. Often in flocks. Formerly bred various parts, last definite records Solway, 1855, Norfolk, 1858. *Scotland*.—Occasional Tweed and Forth, rare vagrant elsewhere, recorded O. Hebrides (May, 1913), Orkneys (Oct., 1913; June, 1918). *Ireland*.—Rare vagrant to all Provinces. Has occurred July, Aug., Sept., Nov., and Dec.

DISTRIBUTION.—*Abroad*.—Breeds in Europe south of about 60° north lat., south to south Spain, Mallorca, Rumania, and Bulgaria. North Asia east to about 85° long., south to Caspian Sea. Winters in Africa south to Loango in west and Tanganyika Territory in east. Once Færoes. Replaced in N. America (in summer) and in S. America (in winter) by *C. n. surinamensis*.

CHLIDONIAS LEUCOPAREIUS

434. *Chlidonias leucopareius leucopareius* (Temm.) — THE WHISKERED TERN.

STERNA LEUCOPAREIA "Natterer" Temminck, Man. d'Orn., 2nd ed., ii, p. 746 (1820—S. Hungary, discovered by Natterer, also Istria, Dalmatia, France).

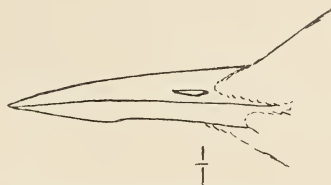
Hydrochelidon hybrida (Pallas), Yarrell, III, p. 527 ; Saunders, p. 637.

DESCRIPTION.—*Adult male and female.* *Winter.*—Fore-head white ; crown streaked black and white, feathers having grey-black central streaks and broad white fringes ; nape black, feathers tipped white ; whole upper-parts including upper tail-coverts ash-grey but back of neck white tinged grey, feathers having short grey tips ; in front of eye small spot black speckled white, otherwise lores, sides of head and neck, and whole under-parts including under wing-coverts and axillaries white ; tail as upper-parts, feathers tipped white and outer pair with the outer webs almost white ; primaries : outer webs and tips pearl-grey (becoming dark brown by wear), inner webs darker but inner edge very narrowly fringed white and basal inner part white extending towards tip in wedge-shape, shafts white ; secondaries pale slate-grey, outer webs narrowly bordered white, inner webs darker with inner and basal part white ; innermost secondaries and all wing-coverts ash-grey as upper-parts. This plumage is acquired by complete moult July–Dec. and even Jan. *Summer.*—Another complete moult (including wings and tail) takes place March and often not complete May. Whole fore-head, crown and nape jet-black ; rest of upper-parts shade darker grey than winter ; from gape and lower part of lores, under eyes, through ear-coverts to nape a broad white stripe ; chin pale slate-grey, becoming darker on throat and breast and blackish on flanks and belly ; under tail-coverts and under wing-coverts white ; axillaries pale slate-grey ; tail and wing as winter and wing-coverts as upper-parts.

Nestling.—As in Black Tern but line across fore-head black ; lores and narrow line round fore-part of eye white ; ground-colour of upper-parts brighter buff than in Black Tern, especially on sides of head, neck and upper-mantle which are orange-buff, black markings much as in Black Tern but more broken up into blotches except for lines on sides of mantle ; chin white ; throat dark brown or blackish to buff-brown ; breast and centre of belly white (much purer white than in Black Tern) ; sides of body and vent brownish to orange-buff.

Juvenile.—Fore-head and fore-part of crown white, usually at first washed brown-buff ; rest of crown and nape black, feathers edged and tipped greyish-white or buffish (when worn back of crown nearly uniform black) ; back of neck white, feathers tipped dark slate ; mantle-feathers with black-brown tips narrowly edged buff ; scapulars same with broad yellowish-buff margins (paler and

brighter than *C. niger* and *leucopterus*); rump and upper tail-coverts ash-grey, latter with faint whitish tips; ear-coverts blacker than adult; whole under-parts white; tail-feathers pale slate-grey with tips edged pale buff and subterminally black-brown; wing-feathers as adults but tips rather darker, innermost secondaries as scapulars; greater and median coverts slate-grey faintly tipped pale yellowish-buff with a small brownish subterminal mark; lesser coverts slate-grey with brownish centres.



Bill of the Whiskered Tern
(*Chlidonias l. leucopareus*).

First winter.—Like adult winter except for brown tips of unmoulted juvenile tail-feathers and innermost secondaries and often a few brown feathers on crown and much-worn wing-coverts. The juvenile body-plumage and central tail-feathers are moulted July–Oct. but not rest of tail nor wing-feathers nor wing-coverts. *First summer*.—A complete moult takes place Ap.–June. New plumage apparently like adult summer.

Measurements and structure.—♂ wing 232–250 mm., tail: outer feather 83–90, central 64–73, depth of fork 12–22, tarsus 22–25, bill from feathers 30–34 (12 measured). ♀ wing 230–242. Primaries: 1st pointed, narrow and about two-thirds primary-coverts, 2nd longest, 3rd 8–12 mm. shorter, 4th 22–30 shorter, 5th 35–50 shorter. Rest of structure as Black Tern, but bill deeper and rather thicker and gonys shorter with sharper slope; webs between toes more deeply incised.

Soft parts.—Bill dark crimson; legs and feet crimson (juv. red-brown); iris red-brown.

CHARACTERS AND ALLIED FORMS.—*C. l. indicus* (India) is smaller; *C. l. swinhoei* (S. China) is like last but throat usually whiter; *C. l. fluviatilis* (Australasia) is paler than others; *C. l. delalandei* (S. Africa) is decidedly darker than other forms. In summer white stripes on sides of head and in winter and juvenile absence of brown patches on sides of breast and larger bill distinguish Whiskered from other Marsh-Terns.

BREEDING-HABITS.—Nests in colonies in shallow water, marshes, lagoons, etc. *Nest*.—More carelessly built than that of Black Tern, often merely a few rushes or weeds floating on water-surface where some vegetation is growing, such as rushes. No definite cup. *Eggs*.—Normally 3, sometimes 2, and rarely 4; ground generally bluish-green, but sometimes stone-grey, ochreous, or pale brownish, spotted or blotched with blackish-brown and ashy-grey, but less heavily than Black Tern. Average of 100 eggs, 39.2×28.4 . Max.: 44×27.6 and 40.2×30 . Min.: 34.9×27.7 and 43.1×26.3 mm. *Breeding-season*.—Latter half May and early June in south Spain.

Incubation.—Shared by sexes (Jäckel), but period not ascertained. Single brooded.

Food.—British specimen contained 20 larvæ of broad-bodied dragon-fly (*L. depressa*). Also known to take coleoptera (water-beetles): odonata and larvæ, *Notonecta glauca* and orthoptera (grasshoppers, etc.). Naumann records small fish, tadpoles, and often small frogs (*Rana esculenta*), but worms only occasionally: Saunders also includes newts.

DISTRIBUTION.—*British Isles*.—Very rare vagrant. *England*.—Fourteen. One Dorset, Aug., 1836. One Yorks., 1842. Two Norfolk, June, 1847, and Oct., 1890. One Scilly Isles, Aug., 1851. One Devon, May, 1865. One Hants., June, 1875. Four Sussex, Aug. 9, 1905. One Kent, same date. One (seen) Suffolk, Sept. 16–17, 1910. One (seen) Cheshire, July 8–12, 1922. *Scotland*.—One, Nithsdale (Dumfries), May 28, 1894. *Ireland*.—One, Dublin Bay, Sept., 1839.

DISTRIBUTION.—*Abroad*.—Nests in south Europe as far north as south Hungary, formerly in Bavaria, also regularly in North Africa. Winters in Africa. Casual northern Russia (Pskoff), north Germany, once Barbados. Represented by closely allied forms in India, China (difference from Indian form, however, requires confirmation), Celebes to New Guinea, and Australia, and S. Africa.

CHLIDONIAS LEUCOPTERUS *

435. *Chlidonias leucopterus* (Temm.) — THE WHITE-WINGED BLACK TERN.

STERNA LEUCOPTERA Temminck, *Man. d'Orn.*, p. 483 (1815—Shores of the Mediterranean, Swiss lakes, etc.).

Hydrochelidon leucoptera (Schinz), *Yarrell*, III, p. 522; *Saunders*, p. 635.

DESCRIPTION.—*Adult male and female*. *Winter*.—Fore-head and fore-part of crown white; rest of crown and nape streaked grey-black and white, each feather being blackish-grey with white edgings; back of lower-neck white; upper-mantle dark slate-grey, feathers very narrowly edged whitish; rest of upper-parts pale slate-grey, feathers edged ash-grey; in front of eye small black spot; ear-coverts blackish; lores, rest of sides of head and whole under-parts including axillaries and under wing-coverts white; tail-feathers pale slate-grey as upper-parts, outer webs of outer feathers whitish as are inner webs of rest; primaries: outer webs and tips pearl-grey (becoming dark brown by wear especially on outer feathers), inner webs darker but basal inner part white extending towards tip in wedge-shape, shafts white or whitish; secondaries: outer pearl-grey narrowly edged whitish, inner dark

* Though Temminck's *Man. d'Orn.* and Meisner and Schinz's *Vög. d. Schweiz* bear the same date, 1815, Temminck's work appeared before that of Meisner and Schinz, as is clear from p. 265 of the latter volume.—E.H.

slate-grey and innermost as lower-mantle, all becoming browner by wear; primary-coverts pearl-grey, becoming brown by wear; greater and median coverts pale slate-grey as lower-mantle; lesser-coverts dark slate-grey, edged whitish as upper-mantle. This plumage is acquired by complete moult commencing sometimes June, sometimes not until Aug., complete sometimes Aug. but often not until Nov., Dec., or even Jan. *Summer. Male.*—Another complete moult commences sometimes Dec. but usually later and complete Ap.–May or even June. Whole head, neck, and throat all round and extending on to upper-mantle glossy blue-black; mantle, back, and scapulars blackish-slate sometimes black; rump and upper tail-coverts white; under-parts black; under tail-coverts white; axillaries black; most under wing-coverts black but lower series and those round edge of wing pale grey to whitish; tail white, when fresh often with ash-grey mottlings at tip; primaries as winter; secondaries and greater coverts slate-grey, darker on inner feathers; median coverts paler; lesser coverts white. *Female.*—As male but head and neck not quite so glossy, tail-feathers considerably mottled ash-grey and central pair grey.

Nestling.—Like that of *C. niger* (only one seen).

Juvenile.—Like that of Black Tern but rump white or nearly white, not slate-grey, and upper tail-coverts paler ash-grey; no dark brown patches on sides of breast but some feathers very rarely tipped pale brown; primaries with outer webs paler pearl-grey and purer white on inner webs; greater and median wing-coverts paler ash-grey; lesser coverts with broader hoary fringes.

First winter.—Like adult winter except for brown tips of unmoulted juvenile tail-feathers and innermost secondaries, brown lesser coverts and worn and brownish greater and median coverts, also frequently a few juvenile body-feathers unmoulted. The juvenile body-feathers and central pair of tail-feathers are moulted Aug.–Dec. but not rest of tail nor wing-feathers nor wing-coverts. *First summer.*—A complete moult commences Jan. and bird usually becomes exactly like adult winter but occasionally considerable amount of plumage as adult summer is acquired.



Bill of the White-winged Black Tern (*Chlidonias leucopterus*.)

Measurements and structure.—♂ wing 200–218 mm., tail: outer feather 67–75, central 58–67, depth of fork 5–11, tarsus 19–22, bill from feathers 23–24 (12 measured). ♀ wing 192–210. Primaries: 1st pointed, narrow, and about two-thirds primary-coverts, 2nd longest, 3rd 5–12 mm. shorter, 4th 18–26 shorter, 5th 34–42 shorter. Other structure as *C. niger* but tail less deeply forked and tips of outer feathers rounder, bill shorter and rather less slender, and webs between toes more deeply incised even than in *C. leucopareus*.

Soft parts.—Bill (ad.) black tinged crimson, (juv. and 1st winter) black-brown tinged orange at gape; legs and feet (ad.) bright vermillion, (juv. and 1st winter) red to red-brown; iris dark brown.

CHARACTERS.—No subspecies. In summer white lesser wing-coverts and black under-wing, and in winter and juvenile absence of dark brown patches on sides of breast, pale rump and short bill distinguish it from other Marsh-Terns.

BREEDING-HABITS.—Nests in colonies in shallow water, marshes, etc., sometimes together with Black Tern. *Nest*.—Mass of floating weed or vegetable matter. *Eggs*.—Usually 3, sometimes only 2, closely resemble those of Black Tern, ground being ochreous or brown and with bold blotches of black and ashy-grey shellmarks, but are smaller. Average of 50 eggs, 33.5×24.6 . Max.: 36.1×26.1 and 34.8×27 . Min.: 29.4×22.7 mm. *Breeding-season*.—Latter part May and early June. *Incubation*.—Probably by both sexes, but exact details lacking as to period, etc. Single brooded.

FOOD.—Maggots in stomach of British specimens: chief food aquatic insects and larvæ, coleoptera, odonata, orthoptera, diptera, phryganeidæ, etc. Probably also tadpoles and small frogs (Nau mann).

DISTRIBUTION.—*British Isles*.—Rare vagrant, mostly April and May, sometimes in small flocks, three in autumn. *England*.—Has occurred Durham, Yorks. (two spring, one Sept. 26, 1896), Norfolk (many), Essex (four seen), Kent, Sussex, Hants., Dorset (several), Devon (several, one Nov., 1870), Cornwall and Scilly, Warwick (two). *Ireland*.—Six. One each Clare, Limerick, Tipperary, Waterford, two Dublin (one Oct., 1841).

DISTRIBUTION.—*Abroad*.—Breeds in south-east Europe, north to Hungary, exceptionally (once) in Bavaria, formerly and perhaps still in Algeria, throughout south Russia and temperate Asia to China. In winter in Africa and south Asia to Australia and doubtfully New Zealand. Casual north Germany, Sweden, Denmark, France, Spain, Balearic Is. Accidental in N. America and Barbados.

Genus GELOCHELIDON Brehm.

GELOCHELIDON Brehm, Handb. Naturg. Vög. Deutschl., p. 771 (1831—Monotype: $\frac{1}{2}$ *G. nilotica*, under three different names into which Brehm separated it).

Larger species, remarkable for its strong, high, and short black beak. Tail comparatively much shorter than in *Sterna*, much shorter than half length of wing, rectrices gradually increasing in length to sides, fork of tail shorter than half tail. Legs comparatively long, a little longer than middle toe with claw. 1 species with several subspecies.

GELOCHELIDON NILOTICA *

436. *Gelochelidon nilotica nilotica* (Gm.)—THE GULL-BILLED TERN.

STERNA NILOTICA Gmelin, Syst. Nat., i, ii, p. 606 (1789—Egypt. Ex Hasselquist).

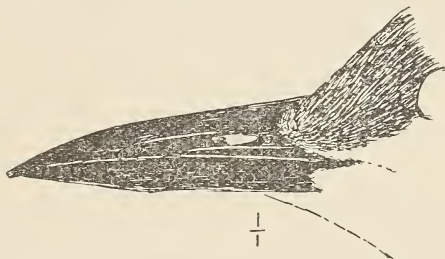
Sterna Anglica Montagu, Suppl. Orn. Dict., text and fig. (1830—Sussex, type in Brit. Mus.).

Gelochelidon palustris Macgillivray, Man. Brit. Orn., ii, p. 237 (1842—New name to replace *anglica* which is not suitable, as only rare visitor).

Sterna anglica Montagu, Yarrell, iii, p. 531; Saunders, p. 639.

DESCRIPTION.—*Adult male and female. Winter.*—Fore-head white; crown and nape varying whitish ash-grey to greyer with or without fine black shaft-streaks; back of neck whitish; rest of upper-parts ash-grey; lores white slightly speckled black, round eyes and streak behind eyes grey-black, feathers edged white; whole under-parts white; tail-feathers as upper-parts but outer webs of outer pair usually almost white; primaries with outer webs and tips pearl-grey, broad blackish line along shafts on inner webs (most marked on outer feather, washed pearl grey on rest but becoming blacker, as do tips, by wear), base of inner webs pale grey extended towards tips in a wedge; primary-coverts pearl-grey; secondaries grey edged and tipped white; all wing-coverts as upper-parts. This plumage is acquired by complete moult July to Oct. *Summer.*—The body-plumage is moulted Feb.—April; birds in full winter plumage in Nov. and Dec, but moulting wings and tail but not body have apparently begun spring moult; of examples examined, however, only one was moulting wings and tail as late as Feb. Fore-head, crown, nape extending on to back of neck, upper part of lores and sides of head to level of lower part of eye glossy greenish-black; rest of sides of head and whole under-parts white; whole upper-parts and wing-coverts and tail as winter but usually a slight shade darker.

Nesting.—Completely covered with longish, soft down with fine hair-like tips. Upper-parts varying buff to grey tinged buff, fore-head uniform but rest of upper-parts streaked and spotted with



Bill of the Gull-billed Tern (*Gelochelidon n. nilotica*.)

* This name has been rejected because the feet are described as flesh coloured. As the description is otherwise good and leaves no doubt as to what is meant by *nilotica*, the lapsus of the colour of the feet must not be used to reject the name. Numerous names would require alteration if one lapsus in an otherwise undoubted description was allowed to influence their recognition.—E.H.

brown-black, crown lightly marked with three narrow but irregular streaks, a few spots or short streaks behind eye and on nape, rest of upper-parts rather more strongly marked with two fairly well-defined parallel streaks down mantle with short streaks or long spots on each side and similar marks on back and rump and proximal portion of wing, distal portion of wing uniform buff shading to white at tip; lores and under eye white tinged buff; rest of under-parts white but throat with varying amount of grey, sometimes confined to tips of down, but sometimes whole throat dark smoke-grey but never so dark as in Common and Arctic Terns and not extending to chin or lores. Down is replaced by juvenile feathers to tips of which it clings.

Juvenile.—Fore-head and back of neck white, crown pale grey, mantle darker grey, all feathers with tips washed sandy-buff, those of crown and nape finely streaked brown-black, those of mantle mostly with dark brown shaft-streaks and often subterminal brown mottlings or patches, tips paler buff, scapulars with sometimes more defined dark brown wedge-shaped subterminal patches; back, rump and upper tail-coverts ash-grey, feathers with faint buff tips and indistinct dark subterminal marks; greyish-black line round and behind eye; under-parts white; tail-feathers grey with brown wedge-shaped marks at tips and slight buff tinge; wing-feathers as adult but darker and duller, inner primaries with white edging at tip, innermost secondaries and inner wing-coverts as scapulars, rest of wing-coverts with only faint buff tips and brown shaft-streaks and mottlings.

First winter.—Like adult winter except for retained brown-tipped juvenile tail-feathers, blacker and worn primaries and dark-tipped primary-coverts. The juvenile body-feathers, lesser and median wing-coverts, some innermost secondaries and greater coverts, central and sometimes some other tail-feathers are moulted Sept.–Dec. but not rest of tail or wings. *Summer*.—Moult apparently later than adult and apparently not all wing- and tail-feathers are moulted. From few examples examined becomes like adult summer, but when first grown black feathers of head are narrowly edged white at tips, some old worn tail-feathers are left, primaries and primary-coverts often as first winter.

Measurements and structure.—♂ wing 315–332 mm., tail: outer feather 120–138, central 80–98, depth of fork 30–48, tarsus 33–37, bill from feathers 34–41 (12 measured). ♀ wing 300–330. Primaries: 1st pointed, narrow and about two-thirds primary-coverts, 2nd longest, 3rd, 18–25 mm. shorter, 4th 42–50 shorter, 5th 62–75 shorter; outer web of outer primary very narrow. Outer secondaries shorter than inner primaries, inner ones about as long as 7th primary, tips of outermost rather square, but of rest sharply sloped off. Tail forked, 12 feathers, tips of outer tapering to rounded point, rounder and shorter in juvenile. About quarter of tibia bare, tarsus rather long, toes shorter, three front ones connected by concave web, hind toe free, claws curved and somewhat dilated,

especially that of middle toe. Bill stout and deep, gonys rather sharply sloped up from angle which is fairly prominent, tip of lower mandible sharply pointed but that of upper more obtuse. Nostrils basal and slit-like.

Soft parts.—Bill black; legs and feet (ad.) black, (juv. and 1st winter) dark red-brown; iris black-brown.

CHARACTERS AND ALLIED FORMS.—*G. n. macrotarsa* (Australia) is larger and has almost white upper-parts; other forms have been separated on slight differences in bill. Stout, black bill distinguishes this from other British Terns.

BREEDING-HABITS.—Breeds in colonies, nests placed close together, on shores of shallow lakes, lagoons, etc. *Nest.*—Hollow in sand or earth, scantily lined with grass, sea-weed or any kind of drifted vegetation. *Eggs.*—Normally 3, sometimes 2 only and 4 have been recorded: ground-colour, ochreous to creamy-whitish or brownish, spotted rather sparingly, with brown, ranging from sienna to sepia and small ashy-grey shellmarks. Average of 100 eggs, 49.3×35.4 . Max.: 54.5×33.2 and 50.1×40.1 . Min.: 43×33.5 and 49.2×32.1 mm. *Breeding-season.*—About 2nd or 3rd week May onward in south Europe, exceptionally end April: end May and early June in Denmark. *Incubation.*—No reliable details available. Single brooded.

FOOD.—Varied, including frogs, tadpoles, etc., young of other shore-breeding birds as well as eggs, lizards, mice, crustacea (small crabs), small fish, and insects. Latter class includes coleoptera (esp. *Melolontha*), orthoptera (locusts and grasshoppers), lepidoptera, odonata, etc.

DISTRIBUTION.—*Great Britain.*—Very rare vagrant. About twenty-eight: Lancs (two), Yorks (one), Norfolk (ten), Kent (four or five), Sussex (six), Hants (one), Devon (one), Cornwall (one), Scilly (one), Pentland Skerries, Orkney (one). All spring or summer.

DISTRIBUTION.—*Abroad.*—Breeds in Europe on coasts of Jutland, formerly on small island near Rügen in Baltic and Schleswig, exceptionally in Bavaria, Hungary (apparently now only one breeding-place), south France, Spain, and Portugal, Greece, Asia Minor, on Black and Caspian Seas, and north-west Africa (island on Tunisian coast, Algeria). Across temperate Asia to Mongolia, Persia, and Punjab (India). In winter, in north and east Africa and tropical Asia south to Sunda Is., Banda and Luang, once Australia. Replaced in nesting areas by closely allied forms in south-east China, Australia, N. and S. America.

Genus HYDROPROGNE Kaup

HYDROPROGNE Kaup, Skizz. Entw.-Gesch. und Nat. Syst., p 91 (1829)—Type according to diagnosis and by subsequent designation by Gray, 1846, *S. caspia*).

Largest Terns with long, strong, red bill, chiefly characterized by their short tail which is only about one-third of length of wing,

its fork being less than one-fourth of length of tail, six middle rectrices being almost equal in length, only three lateral ones on each side elongated. Feet short, tarsus much shorter than bill. Wings long and pointed. One species, one subspecies, which, however, requires further elucidation.

HYDROPROGNE CASPIA *

537. *Hydroprogne caspia* (Pall).—THE CASPIAN TERN.

STERNA CASPIA Pallas, Novi Comm. Acad. Petr., xiv, i, p. 582, pl. xxii. (1770—Caspian Sea, S. Russia).

Sterna Tschegrava Lepechin, Novi Comm. Acad. Petr., xiv, i, p. 500, pl. xiii, Fig. 2 (1770—Caspian Sea, S. Russia).

Sterna caspia (Pallas), Yarrell, III, p. 536; Saunders, p. 641.

Sterna tschegrava Lep. Hand-List (1912), p. 192.

DESCRIPTION.—*Adult male and female.* *Winter.*—Fore-head, crown, and nape white closely streaked black, width of streaks varying individually, but always narrowest on fore-head and widest on nape; under eye and ear-coverts mostly black, feathers with white bases and varying amount white fringes, in front of eye sometimes similar but usually streaked as fore-head (feathers on nape somewhat elongated); back of neck white; rest of upper-parts, wing-coverts, and secondaries ash-grey with silvery tinge, but rump, upper tail-coverts, and tail rather paler and sometimes almost white; whole under-parts white; primaries with tips, outer webs, and outer part of inner webs silver-grey, rest of inner webs dark grey, bases paler extending in ill-defined wedge-shape toward tips, shafts straw-white; primary-coverts silver-grey. N.B.—Exposed portions of primaries become blacker by wearing off of silvery radii, rami being brown-black. This plumage is acquired by complete moult Aug.—Nov. sometimes finishing Dec. *Summer.*—Another complete moult takes place Jan.—Mar. As winter but fore-head, crown, and nape and upper-part of lores, line under eye and upper ear-coverts glossy, greenish-black; lower part of lores and lower ear-coverts white as rest of under-parts.

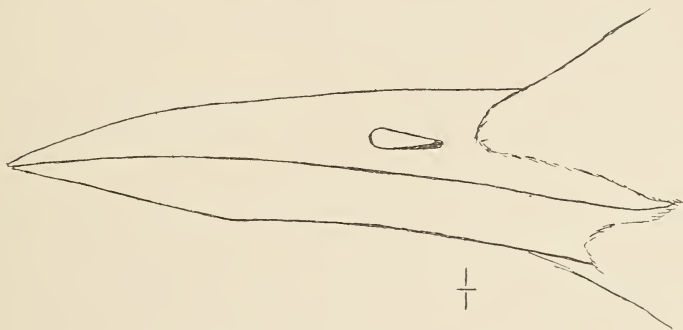
Nestling.—As in Gull-billed Tern upper-parts varying dull buff to buffish-grey, but with fewer brown-black markings, these being confined to small spots or specklings on upper-parts but not on crown and neck, which are unspotted with base of down dark

* It has been decided, for the sake of uniformity, in cases where names are in dispute, owing to different opinions in the interpretation of the International Rules, to adopt in this book the names decided upon by the majority of the B.O.U. List Committee, whether we are in personal accord with that decision or not. For this reason the name *caspia* is used for this bird.

Lepechin's description and figure are quite clear, but his name has been rejected because not all of Lepechin's names were binomial, but in my opinion they should be accepted as he seemed to be generally binomial in principle. If names were rejected because of some backslidings in the authors' publications all names of Boddaert (often not binomial!), Hermann, Brünnich, and others, could not be accepted; their rejection would cause great confusion.—E.H.

brown ; under-parts white often with buffish tinge and throat and chin dusky.

Juvenile.—Fore-head, upper-lobes, crown, and nape brown-black, streaked grey-buff, each feather being fringed grey-buff ; lower-lobes blackish-grey, below eye and ear-coverts black, feathers with white bases and grey fringes ; back of neck white, slightly mottled dark grey ; mantle grey, feathers tipped buff and with subterminal brown spots ; upper-scapulars same but with wider buff tips and black-brown irregular v-shaped subterminal marks ; lower scapulars dark grey edged and tipped greyish-white ; back and rump paler grey, feathers fringed hoary ; upper tail-coverts almost white with dark brown spot-like subterminal marks ; whole under-parts white ; tail-feathers with blackish distal portions, extreme tips buffish-white, outer webs with some silver-grey especially on outer feather and proximal part of rest, proximal



Bill of the Caspian Tern (*Hydroprogne caspia*).

portions of inner webs whitish, two central pairs more tinged silver-grey and with one or two brown-black subterminal bands divided with buffish-white ; primaries brown-black, outer webs washed silver-grey, inner feathers edged and tipped white, shafts pale brown or brownish-white ; secondaries blackish-grey tipped and with most of inner webs white, innermost feathers tinged buff at tips and with black-brown subterminal marks ; primary-coverts blackish, washed silver-grey, narrowly edged whitish at tips ; greater coverts dull grey, edged and tipped whitish tinged buff, innermost feathers with subterminal black-brown marks ; median coverts paler grey, tipped buff ; lesser coverts with dark grey centres and pale grey fringes.

First winter.—Like adult winter but crown and especially fore-head and lobes usually more heavily streaked black ; mantle and scapulars duller grey ; primaries, secondaries, primary-coverts, and tail-feathers as juvenile but still blacker through wear. The juvenile body-plumage and wing-coverts are moulted Oct.—Jan. but not remiges or rectrices. *Summer*.—A complete moult takes place Jan.—July. Like adult winter but as in first winter fore-head, lobes,

and crown more heavily streaked black ; upper-parts and especially scapulars duller grey not so silvery as adult ; tail-feathers dull grey, tipped greyish-white, outermost mostly white but grey on inner webs near tip ; outer primaries not quite so silvery as adult and darker on inner webs ; secondaries and lesser-coverts darkish grey in centres. N.B.—Some appear to moult in 1st summer into a plumage like adult summer except for some dull grey on tail-feathers and secondaries.

Measurements and structure.—♂ wing 398–425 mm., tail : outer feather 135–150, central 98–110, depth of fork 30–45, tarsus 45–47, bill from feathers 64–72 (10 measured). ♀ wing 400–425. Primaries : 1st narrow, pointed, and about two-thirds primary-coverts, 2nd longest, 3rd 15–20 mm. shorter, 4th 40–48 shorter, 5th 70–80 shorter. Rest of structure as in Gull-billed Tern but tail comparatively less forked, rather more of tibia bare, bill very stout and deep and gonyes comparatively shorter.

Soft parts.—Bill (ad.) rich coral-red, (juv.) paler, tipped dusky ; legs and feet black ; iris dark brown.

CHARACTERS.—*H. c. strenua* (Australia) has been described as having a deeper bill, but this is not a constant character. Very large size and very large, stout, deep, red bill distinguish this from all other British Terns.

BREEDING-HABITS.—Nests in colonies on low-lying, sandy islands or shores. *Nest.*—Mere hollow made by bird in sand. Usually nests are only a couple of feet or so from one another and colonies are sometimes of considerable size. *Eggs.*—Normally 3 in Black Sea, occasionally 2 only, but Rohweder says 2 is normal clutch in List and 3 exceptional. Colour stone-buff, blotched and spotted rather sparingly with blackish-brown and ashy shellmarks. Average of 100 eggs, 64×44.4 . Max. : 72.3×44.5 and 65×46.5 . Min. : 55×40.5 mm. *Breeding-season.*—Second half May in central Europe, and in June in Gulf of Bothnia. *Incubation.*—Probably shared by both sexes but information defective. Period about 20 days. Single brooded.

FOOD.—Mainly fish, especially those of genus *Clupea*, though *Pleuronectes* and *Scomber* also recorded. Occasionally eggs and young of other birds taken : half grown Lapwing (*Vanellus vanellus*) found in stomach (Schilling).

DISTRIBUTION.—*England.*—Very rare vagrant. About twenty-three obtained and others seen : Northumberland, Yorks., Lincs., Suffolk, Hants. (one each), Sussex (two), Kent (two and others doubtful), Notts. (two), Dorset (four), Norfolk (nine got and others seen, the last July, 1901, July, 1902, Aug., 1910, and May, 1918).

DISTRIBUTION.—*Abroad.*—Locally on coasts of Europe from about 60° north lat. southwards (Baltic, Sylt, Mediterranean, Black and Caspian Seas) ; throughout Asia east to China, Malaysia to Australia and New Zealand ; many parts of Africa, chiefly in winter ; also

N. America, wintering on south Atlantic and Gulf coasts. Casual Færoes. Northern birds are migratory, wintering in Africa, India and Sunda Island. Australian and New Zealand birds have been separated, but require confirmation.

Genus STERNA L.

STERNA Linnæus, Syst. Nat., ed. x, i, p. 137 (1758—Type by tautonymy and subsequent designation *S. hirundo*).

Medium and small Terns with generally slender, very slightly curved, laterally compressed, pointed bills, about length of head or longer. Tarsus short, as long as middle toe with claw or slightly shorter or longer. Wings long and pointed. Tail deeply forked, outer tail-feather much longer than rest, and ending in a more or less narrow tip (so-called "streamers"). Toes completely webbed, hind toe present. Over 30 species in all parts of World.

Key to species of genus STERNA (adults in summer).

- | | | | |
|---|---|---|---------------------------------|
| 1 | { Forehead white | 2 | |
| | { Crown black to base of bill | 3 | |
| 2 | { Wing under 200 mm. | | <i>S. albifrons</i> , p. 715 |
| | { Wing over 200 mm. | | <i>S. fuscata</i> , p. 718 |
| 3 | { Larger, bill longer than 45 mm., feathers of nape forming a conspicuous crest of pointed feathers | | <i>S. sandvicensis</i> , p. 701 |
| | { Smaller, bill shorter than 45 mm., feathers of nape not forming a conspicuous crest of pointed feathers | 4 | |
| 4 | { Underside snow-white or with pink tinge | | <i>S. dougallii</i> , p. 705 |
| | { Underside with greyish tinge | 5 | |
| 5 | { Bill as a rule entirely red, tarsus under 18 mm., dark colour on inner web of outer primary more restricted* | | <i>S. paradisæa</i> , p. 712 |
| | { Bill with more or less extended blackish tip, tarsus over 18 mm., dark colour on inner web of outer primary more extended | | <i>S. hirundo</i> , p. 708 |

STERNA SANDVICENSIS

438. *Sterna sandvicensis sandvicensis* Lath.—THE SANDWICH TERN.

STERNA SANDVICENSIS Latham, Gen. Syn., Suppl., i, p. 296 (1787—Kent, ex Latham, Gen. Synops., iii, 2, p. 356, Sandwich in Kent).

Sterna Cantiaeca Gmelin, Syst. Nat., i, 2, p. 606 (1789—New name for Latham's Sandwich Tern).

Sterna Boysii Latham, Index Orn., ii, p. 806 (1790—Also ex Gen. Synops., iii, 2, p. 356, Sandwich, Kent).

Sterna cantiaeca Gmelin, Yarrell, iii, p. 540; Saunders, p. 643.

DESCRIPTION.—*Adult male and female.* Winter.—Fore-head and lores white; in front of eye small black spot and under eye a few black streaks; fore-part of crown white with small black spots or

* This character is, however, variable.

shaft-streaks ; back and sides of crown and nape blackish, much streaked white, feathers having grey-black centres and wide white fringes, those of nape elongated and pointed ; back of neck extending on to upper-mantle white ; mantle, scapulars and back ash-grey, scapulars tipped white ; rump nearly, and upper tail-coverts nearly or quite white ; whole under-parts, including under-wing, white, sometimes with salmon-pink tinge, especially on concealed portion of feathers ; tail white, but usually a penultimate dark grey streak on inner web of outermost feather (sometimes this is absent and sometimes other feathers are slightly marked grey) ; primaries : outer webs and tips silver-grey, shafts white, broad grey-black line along shafts on inner webs (on 2nd primary (outermost) width of line at tips of primary-coverts is equal to width of outer web), rest of inner webs to tips white, inner primaries paler ; secondaries with inner webs and tips white and outer webs pale ash-grey and sometimes narrow dark grey shaft-line ; primary-coverts silver-grey with dark grey line along shaft on inner webs of outer feathers ; rest of coverts ash-grey as mantle, shading to white round edge of wing. This plumage is acquired by complete moult Aug.-Dec. *Summer*.—Another complete moult takes place Feb.-April, but it seems doubtful if outer 5 or 6 primaries always moult twice as 2nd is often not fully grown when inner primaries are commencing spring moult. Plumage as winter, but fore-head, upper half of lores, whole crown to level of lower part of orbit and nape jet-black, feathers of nape more elongated and pointed than in winter, outer tail-feathers pure white without grey streak on inner web ; salmon-pink tinge on under-parts, when present, stronger.

Nestling (Plate 10).—Down on head, neck, upper-mantle, wings, sides of neck, and upper-throat of matted appearance due to number of filaments of down being joined together in a common sheath at tip* as in Roseate Tern. Lower half of upper-parts and rest of under-parts with down separated and tips fine. Matted portion of upper-parts and throat pale buff, bases of down black and some black mottling on crown and sides of head and a black line along wing ; rest of upper-parts buffish-white, mottled grey-black ; rest of under-parts white.

Juvenile.—Fore-head, upper-lores, whole crown, nape, and narrow line under eye black, feathers edged and tipped sandy-buff, which at first almost obscures black, but subsequently becoming worn and whitish and revealing more black (feathers of nape very little elongated and tips not pointed) ; hind-neck white with some grey-black speckles ; mantle, scapulars, and back washed pale sandy-buff (becoming almost white when worn) and widely barred brown-black ; upper tail-coverts white, some with black marks and buff wash at tips ; tail-feathers : tips washed sandy-buff (white

* Judging by a bird growing feathers much of this down becomes separated later.—H.F.W.

when worn) mottled brown-black, rest of central pair white but other feathers with grey outer webs and distal portion of inner webs, becoming brown-black towards tips; whole under-parts white; primaries: outer webs duller silver-grey (becoming blackish when worn) than adult, black line on inner webs broader and tips of feathers black washed silver-grey with narrow white margin, inner primaries with broader white at tip; secondaries as adult but with outer webs darker grey which extends on to inner webs of inner feathers, innermost feathers barred black-brown as scapulars;



Juvenile of the Sandwich Tern (*Sterna s. sandvicensis*).

greater coverts ash-grey, tipped white, innermost as scapulars; median coverts ash-grey, washed sandy-buff and with crescentic black-brown bars near tips; lesser coverts dark grey, narrowly fringed ash-grey.

First winter.—Like adult winter but feathers of nape not so elongated or pointed, tail- and wing-feathers as juvenile, but new wing-coverts as adult and juvenile ones with brown bars mostly worn off, innermost one or two secondaries often renewed and like adult and sometimes central pair of tail-feathers. The juvenile body-plumage, varying number of wing-coverts and innermost secondaries and sometimes central pair of tail-feathers are moulted Aug.-Dec. *First summer*.—A complete moult takes place Mar.-June, but outer tail-feathers sometimes not renewed and when renewed dark grey at tips, sometimes not all secondaries. Plumage like adult winter in all those examined.

Measurements and structure.—♂ wing 290-325 mm., tail: outer feather 148-170, central 72-85, depth of fork 65-85, tarsus 27-30, bill from feathers 52-58 (9 measured). ♀ wing 285-308. Primaries: 1st pointed, narrow, and about two-thirds primary-coverts, 2nd longest, 3rd 14-20 mm. shorter, 4th 33-48 shorter, 5th 52-75 shorter; outer web of outer primary very narrow. Outer secondaries shorter than inner primaries, inner ones about as long as 7th or 8th primaries, outer webs sharply sloped off at tips. Tail deeply forked, 12 feathers, outermost pair much elongated, tapering to fine point, rest becoming shorter, less tapering, and less pointed towards centre, in juvenile outer feathers much shorter and less tapering.

About half tibia bare, tarsus short, toes short, three front ones connected by concave webs, hind toe free, claws concave and curved and middle one dilated. Bill almost straight, much compressed, tapering to sharp point, gonys long and gently sloped up to tip, angle rather prominent. Nostrils basal, slit-like.

Soft parts.—Bill black, tip horn-yellow; legs and feet black, soles yellow; iris dark brown.

CHARACTERS AND ALLIED FORMS.—*S. s. acuflavida* (N. America) has more black and only very narrow white line along inner edge at tips of primaries, especially noticeable on 3rd to 5th. Long black bill with yellowish tip distinguishes this from other British Terns.

FIELD-CHARACTERS.—Larger than other common British Terns. In repose, black feet, black yellow-tipped bill, occipital crest, comparatively long tarsus, and gull-like pose distinctive. In flight, tail shorter and less deeply forked, and wings longer and narrower in proportion than in Common, Arctic, or Roseate. Usually plunges from greater height and remains submerged longer than smaller Terns. Call-note a loud grating "kirr-whit"; alarm-note a reiterated "gwit" or "gwut."

BREEDING-HABITS.—Nests in colonies on low-lying islands, sand-dunes, and sandy shores. *Nest.*—Generally a mere hollow scratched in sand but marram-grass also used at times freely. *Eggs.*—Normally 2, often 1 only, and occasionally 3, varying from creamy-white to warm brownish, sometimes unmarked or spotted, blotched and smeared with blackish-brown or reddish-brown and ashy-grey shellmarks. Average of 100 eggs 51.7×36.1 . Max.: 55.6×36.2 and 53.2×39 . Min.: 44×34.7 and 51×33.4 mm. *Breeding-season.*—Exceptionally end April, usually from early May onward, most laying latter half May. *Incubation.*—By both sexes. Period 20–21 days. Single brooded.

FOOD.—Small fish: young frequently fed on "sand-eels" (*Ammodytes*) but other species such as whiting, sprat (*Clupea*), weever (*Trachinus*), etc., found by nests, and remains of gar-fish and herrings up to 5 in. long also taken.

DISTRIBUTION.—*British Isles.*—Summer-resident (end March (early date Mar. 18, 1913, Cornwall) to end Sept.). As passage-migrant (end March to end April and mid-July to end Sept. (late dates Oct. 11, 1910, Yorks., Oct. 23, 1911, Edenmouth, Nov. 16, 1910, Fife)) occurs many parts of British coast and occasionally inland. *England and Wales.*—Large breeding colonies Farne Isles (Northumberland) and Ravenglass (Cumberland). Breeds Walney Island (Lancs.) and Anglesey and only occasionally Kent, Scilly Isles, Suffolk (1906), and Norfolk (1893, 1921, and in 1922 many pairs) and has ceased Essex. *Scotland.*—Breeds Kirkcudbright and Wigtownshire and sporadically in Clyde area and on east coast, also breeds Sanday (Orkneys).*

* The Rev. J. R. Hale informs us that it breeds on Sanday and not North Ronaldshay, as stated in Saunders's Manual.

Ireland.—Several colonies on loughs in Mayo, one in Fermanagh, and occasionally on islands off Galway, Down, in Donegal, and elsewhere. Appears to be increasing.

DISTRIBUTION.—*Abroad*.—Breeds Atlantic and North Sea coasts southward to Mediterranean, Black Sea, and Caspian. In winter from Canaries and coasts of north and west Africa to Cape of Good Hope and Natal, down Red Sea and across Mesopotamia to Persian Gulf, Mekran coast, Karachi, and Sind. Represented by *S. s. acuflavida* in N. America, from Carolina to Mexico, and British Honduras, wintering in Florida, Louisiana, Central America, West Indies, and S. America.

STERNA DOUGALLII

439. *Sterna dougallii dougallii* Mont.—THE ROSEATE TERN.

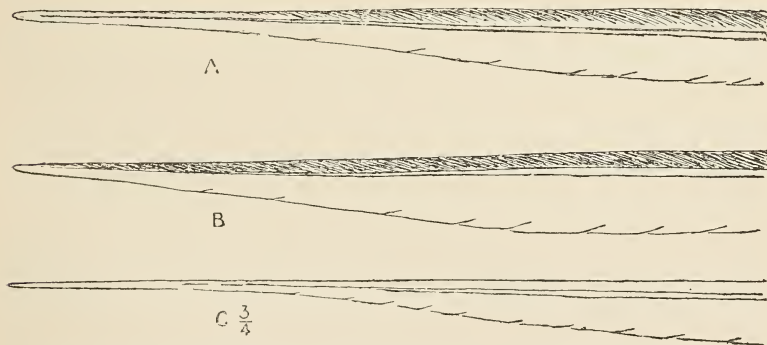
STERNA DOUGALLII Montagu, Orn. Dict. Suppl., text and plate (1813—Firth of Clyde, Scotland).

Sterna rosea Graves, Brit. Orn., III, text and plate (1821—New name for *Sterna dougallii*).

Sterna Macdougalli Macgillivray, Man. Brit. Orn., II, p. 233 (1842—Corrected name for *dougallii*).

Sterna dougalli Montagu, Yarrell, III, p. 544 ; Saunders, p. 645.

DESCRIPTION.—*Adult male and female. Winter*.—Like winter Common and Arctic Terns but fore-head sometimes with some blackish spots and feathers of fore-part of crown often with black



Outer-tail feathers of summer adults of A. Arctic Tern (*S. paradisæa*), B. Common Tern (*S. hirundo*), C. Roseate Tern (*S. dougallii*.)

or dusky tips ; mantle and scapulars considerably paler pearly ash-grey ; rump and upper tail-coverts still paler ash-grey but not white ; under-parts usually apparently with some rose tinge ; tail : outer pair white (not with dark outer web), central pair pale ash-grey with white tips and rest same but with white inner webs ; primaries considerably paler pearl-grey than in Common and Arctic Terns, white on inner edge of inner webs of outer as well as inner primaries extending to tips and not cut off in a wedge ; secondaries ash-grey

with white tips and inner webs, inner feathers with a dark grey central patch ; upper lesser coverts dark grey tipped and fringed ash-grey, forming narrower and paler line than in Arctic and much paler than in Common Tern but sometimes this dark line is absent and all lesser coverts are like rest of coverts pearly ash-grey as mantle. This plumage is acquired by complete moult July–Oct. *Summer*.—Apparently moults as Common Tern but none in moult examined. Head as Common and Arctic Terns but back of neck white with slight grey tinge ; rest of upper-parts as winter much paler and more pearly-grey than in Common or Arctic and rump and upper tail-coverts paler grey but not white ; whole under-parts white with strong rose blush in life (varying in strength and disappearing in most skins) ; tail- and wing-feathers as winter ; all wing-coverts as mantle.

Nestling (Plate 10).—Differing from nestlings of Common and Arctic Terns by coarse or matted appearance of down, this being caused by a number of filaments of down being joined together in a common sheath at the tips* as they are at the extreme base, tips of white down on breast and belly are, however, separate and normal. Whole upper-parts, sides of head, chin, and throat varying grey tinged buff to rich buff with base of down brown-black and some here and there entirely black, giving a speckled appearance with no definite pattern ; breast and belly white.

Juvenile.—Fore-head and lores freckled brown, each feather having a brown tip fringed white ; top of crown streaked brown, black, and white ; nape and ear-coverts brown-black, feathers narrowly fringed whitish ; back of neck white, more or less freckled brown ; mantle pale blue-grey, feathers with brown-black crescentic bars at tips ; upper scapulars with a double bar divided by whitish patch ; lower scapulars with long white tips without bars ; back, rump, and upper tail-coverts ash-grey, sometimes faintly mottled brown ; black spot in front of and black speckles under eyes ; rest of under-parts white ; tail : outer pair white on both webs, next two pairs with outer webs dark grey with fine blackish line near tip and inner webs white, next two pairs with ash-grey outer webs and dark brown band at tip, inner webs white, central ones ash-grey on both webs with dark brown crescentic bar at tip ; wing-feathers as adult but darker grey, and grey-black line along shafts of outer primaries wider, but white on inner edge extended to tip as in adult, innermost secondaries barred as upper scapulars ; greater and median coverts pale blue-grey, tipped whitish and with faint brown subterminal frecklings ; lesser coverts dark grey fringed whitish. N.B.—As compared with *S. h. hirundo* and *paradisæa* fore-head freckled not white or buff, crown more streaked, bars on upper-parts blacker, outer tail-feathers white not with blackish outer webs,

* Whether these sheaths are retained throughout the downy stage I cannot say, as the only nestlings of this species available for examination are very young ones.—H.F.W.

dark grey lesser coverts forming a narrower line and not so dark, primaries with inner edge of white extended right up to tip.

First winter.—Like adult winter but wings and tail as juvenile. N.B.—Very few examined and none in moult. *Summer*.—Like adult winter but fore-head purer white, fore-part of crown with more hoary appearance and less streaked, outer webs of outer tail-feathers (except outermost which are white) rather darker, grey of secondaries and lesser coverts rather darker. Only one moulting examined, this completing (June), some tail-feathers growing and wings new.

Measurements and structure.—♂ wing 223–236 mm., tail : outer feather 140–205, central 60–70, depth of fork 75–135, tarsus 19–21, bill from feathers 37–40 (12 measured). ♀ wing 218–233, tail : outer 150–190, central 60–68, fork 85–125. Juvenile wing 207–225, tail : outer 110–120, central 65–66, fork 45–54. Primaries : 1st narrow, pointed and about two-thirds primary-coverts, 2nd longest, 3rd 10–14 mm. shorter, 4th 26–32 shorter, 5th 44–50 shorter. Rest of structure as Common Tern but tail much longer in proportion to wings and outer tail-feathers more sharply tapered with finer point both in juvenile and adult.

Soft parts.—Bill (winter and juv.) black, (ad. summer) commencing end May base becomes red-vermilion extending to half upper and third lower mandible ; legs and feet (winter) orange-red, (ad. summer) red-vermilion, (juv.) pale orange-red ; iris dark brown (Bureau).

CHARACTERS AND ALLIED FORMS.—*S. d. korustes* (Ceylon, Andaman Is., Tenasserim) is rather smaller ; *S. d. bangsi* (Seychelles, Malay Peninsula, S. China, New Guinea) is stated to have whole bill red in summer ; *S. d. gracilis* (Australia) is stated to have longer and finer bill, but this appears very variable. Distinguished from Common and Arctic Terns at all ages by white outer web of outer tail-feather, shorter wing, white inner edge of outer primaries extended to tips as well as other differences described above.

FIELD-CHARACTERS.—Adult has upper-parts paler grey, and outer tail-feathers longer than in Common or Arctic, whilst breast is suffused with rose-pink, (N.B.—In breeding season breast of Sandwich Tern is salmon-pink and that of Common Tern often has a vinaceous-grey tinge), and bill is black, but these characters are only apparent in favourable positions and good light, and apart from colour of bill do not apply to immature birds. Flight extremely buoyant, wings being neither raised nor depressed to same extent as in Common and Arctic. Cries very characteristic ; call-note “tehu-ick” ; alarm-note a loud guttural “aach.”

BREEDING-HABITS.—Usually found breeding among colonies of other Terns, preferably on rocky islets, but at times also on shingle-banks on shore. *Nest*.—Practically none, eggs usually laid in natural hollow in rock. *Eggs*.—Two, but often one only (evidence of three in British Isles unsatisfactory), elongated and rather

pointed oval, with creamy or buff ground, blotched and spotted, often with zone at large end, dark reddish-brown with ashy shell-marks. Average of 100 British eggs, 44×29.9 . Max. : 47.8×31 and 44×32.1 . Min. : 39.1×29.7 and 41×27.3 mm. *Breeding-season*.—From early June onward. *Incubation*.—By both sexes in turn. Period ; 21 days (Lynds Jones), Bureau's estimate of 18 days erroneous. Single brooded.

FOOD.—Small fish caught at sea but no definite records of species.

DISTRIBUTION.—*British Isles*.—Summer-resident and vagrant. Breeds regularly, Farne Isles (Northumberland), a few pairs, Skerries (N. Wales), small colony, another locality (N. Wales), large colony. Bred Dorset (one or two pairs), 1921, and possibly Norfolk, 1921. Large breeding colony discovered Ireland, 1913 (G. R. Humphreys, *British B.*, vii. p. 186), although numbers much reduced, birds have bred or been seen there every year since. Second colony found in another locality 1917 (C. J. Carroll, *l.c.*, xi. p. 122), but no birds there 1920. Large colony discovered in third locality 1922 (C. V. Stoney, *Irish Nat.*, 1922, p. 129). Elsewhere vagrant, very rare Scotland. Formerly bred Foulney and Walney (Lanes.), Scilly, Clyde and possibly Moray areas, Rockabill Is., Dublin, and Copeland Is., Down, and probably also in north-west Ireland.

DISTRIBUTION.—*Abroad*.—Coasts of Atlantic and (sparingly and disappearing) North Sea, from about 57° north lat. in summer to Mediterranean, Azores, and islands near Madeira ; in north-west and east Africa ; N. America from Sable Island to Long Island and from Bahamas to Lesser Antilles and north coast of Venezuela, wintering from Bahamas to Brazil. In winter Azores, eastern and southern coasts of Africa. Represented by subspecies on Andaman Is., islands of Indian Ocean from Seychelles to New Guinea, and in Australia, but only Andaman form easily separable.

STERNA HIRUNDO *

440. *Sterna hirundo hirundo* L.—THE COMMON TERN.

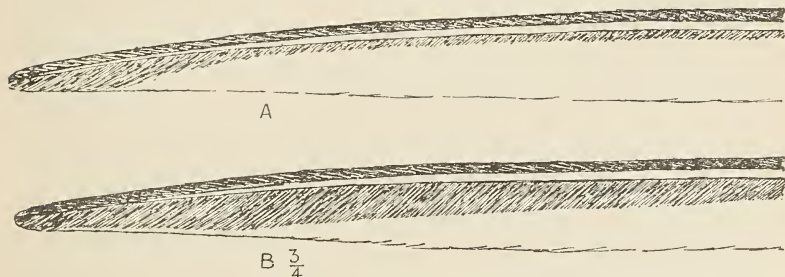
STERNA HIRUNDO Linnæus, *Syst. Nat.*, ed. x, i, p. 137 (1758—"Europa." Restricted typical locality: Lakes and swamps of Sweden. Ex *Fauna Svecica*, No. 127).

Sterna fluviatilis Naumann, Yarrell, III, p. 549 ; Saunders, p. 647.

DESCRIPTION.—*Adult male and female*. *Winter*.—Fore-head white ; fore-part of crown same but feathers with grey-brown centres giving slightly mottled appearance ; back of crown and nape black-brown ; back of neck white, most feathers tipped grey ; rest of upper-parts blue-grey, tips of scapulars whitish and upper tail-coverts more ashy ; lores white but spot in front of eye and speckles under eye black ; rest of under-parts white ; tail-feathers grey, inner webs paler and whitish at base, outer webs of outer brown-

* There is no reason for rejecting the well-known name *Sterna hirundo*, the description and breeding-place distinctly showing that this Tern was meant by Linnæus. Cf. *Ibis*, 1913, pp. 301-3.—E.H.

black washed grey and inner webs dark grey towards tip ; primaries : outer webs and tips silver-grey,* shafts white, inner webs white with in 2nd (outer) primary a grey-black line along shaft increasing in width towards tip and on level with tip of 5th primary extending to half or more than half width of inner web and on level with tip of 6th exceeding width of outer web, in 3rd to 6th primaries black line is wider and blackish tips longer enveloping white in form of a wedge, inner feathers greyer, not so blackish and edged white to tips of inner webs ; secondaries grey (silvery on outer webs) tipped white and with inner portion of inner webs white ; primary-coverts silver-grey ; median and greater coverts blue-grey, latter narrowly



Distal portions of outer (end) primaries of A. the Arctic Tern, B. the Common Tern.

edged white ; lesser coverts dark, almost blackish, grey with inconspicuous ashy fringes. This plumage is acquired by complete moult commencing July-Aug. with body, tail, and inner primaries and completed in winter-quarters. *Summer*.—A moult of body, tail-feathers, and wing-coverts takes place Feb.-Mar. but it seems doubtful if all primaries and secondaries are moulted twice, insufficient winter material being available to determine this. Whole fore-head and crown (to level of lower part of orbit) and nape jet-black ; back of neck blue-grey as mantle, but white basal portion of feathers not always entirely concealed ; mantle, scapulars and back blue-grey, rather darker and bluer than winter, tips of lower scapulars white ; rump and upper tail-coverts white ; lower part of lores, sides of head, and neck and chin as well as under wing-coverts and under tail-coverts white ; axillaries washed grey ; rest of under-parts grey with a mauve tinge (varying in strength but not white as winter) ; tail-feathers paler than winter, inner webs of all white, outer webs paler grey than winter, central pair white, sometimes washed grey on outer webs ; primaries and secondaries as winter ; all wing-coverts blue-grey as mantle, lesser coverts along edge of wing white.

Nestling (Plate 10).—Completely covered with longish, soft

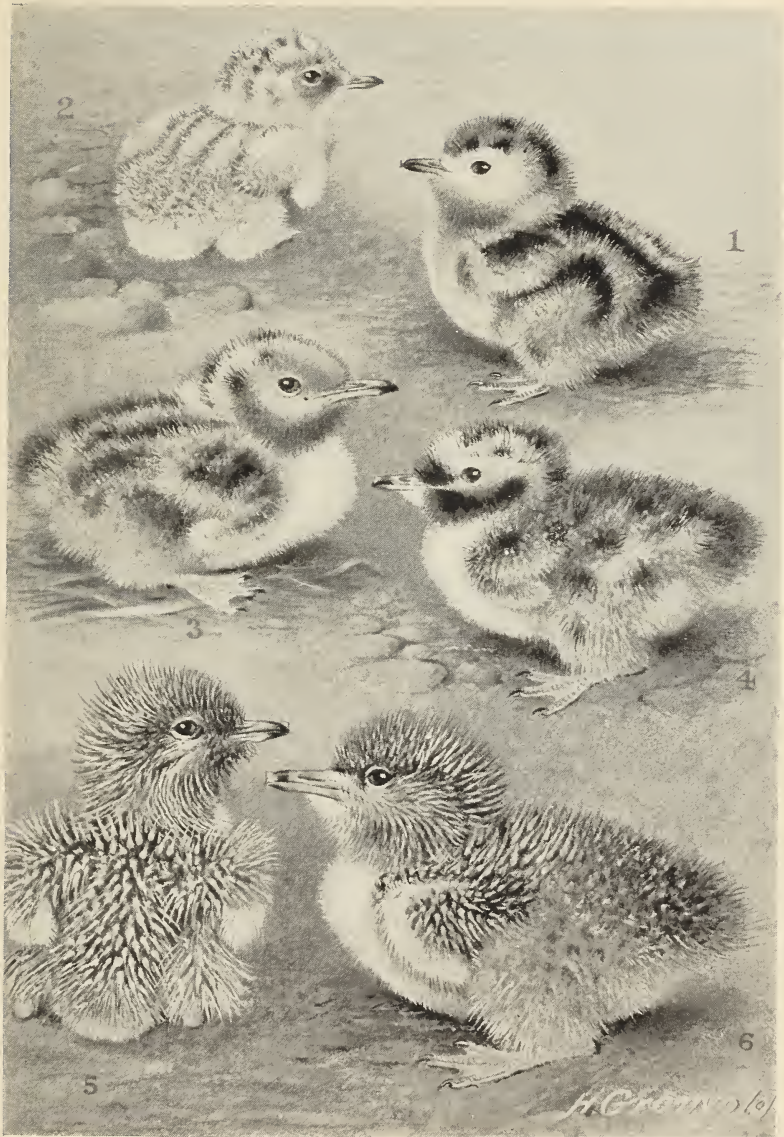
* The rami are black and only the radii silver-grey, the latter become gradually worn off and thus the outer webs and tips become black, especially in the outer feathers which are most exposed.—H.F.W.

down with hair-like tips. Upper-parts varying from buff to clay-colour and sometimes grey, fore-head generally uniform but sometimes dusky and sometimes with black spot, rest of upper-parts with spots and fairly large patches of black-brown, fairly evenly distributed and forming no definite pattern but with suggestion of parallel stripes on mantle; throat and lower part of chin pale brown to dusky-black, upper part of lores usually same but centre of lores and round eye buff, apex of chin often white; rest of under-parts white. Down is replaced by juvenile feathers, to tips of which it clings.

Juvenile.—Fore-head white more or less washed buff; fore-part of crown same, streaked black-brown, feathers very narrowly fringed pale buff; black spot in front of eye rather larger than in adult winter; back of neck white, feathers tipped ash-grey and buff; mantle and scapulars blue-grey, feathers tipped varying amount and shade of buff with penultimate dark brown bar; back and rump ash-grey and sides of rump and upper tail-coverts white, feathers lightly tipped pale buff; under-parts white with sometimes buff tinge on chin and throat; tail as adult winter but outer webs darker and browner, tips white with a penultimate brown mark; primaries as adult but less silvery on outer webs and tips and extreme tips of most white; secondaries darker slate-grey and with longer white tips than adult and innermost feathers barred as scapulars; primary-coverts dull grey, tipped white; greater coverts ash-grey edged and tipped hoary or pale buff; median coverts and innermost greater like mantle but more lightly tipped brown and buff; lesser coverts greyish-black, narrowly fringed whitish or pale buff. N.B.—Buff and brown at tips of feathers of upper-parts varies in strength and in worn plumage (Aug. and Sept.) tips become whitish or almost disappear.

First winter.—New body-feathers like adult winter and tips of unmoulted juvenile feathers becoming worn off so that upper-parts become like adult winter but mantle duller grey and rump whiter; tail and wing as juvenile but tips of greater and median coverts worn off and lesser coverts dark brown. The juvenile body-plumage is partially moulted Aug.–Nov. and occasionally a few lesser wing-coverts but not rest of wings nor tail. Amount of moult varies individually and some appear to moult only a few body-feathers and several from winter-quarters (Nov. and Dec.) are in very worn juvenile plumage with no signs of moult. *First summer*.—A complete moult takes place Feb.–June. In all those examined with definite traces of juvenile plumage new feathers have been like adult winter; some, however, appear to acquire adult summer-plumage and these when fully moulted have a few old brown lesser coverts, often a few old white feathers on fore-head and often greyer rumps and upper tail-coverts than adults in summer.

Measurements and structure.—♂ wing 255–288 mm., tail: outer feather 135–175, central 68–87, depth of fork 65–95, tarsus 19–21, bill from feathers 35 (one 33)—39 (12 measured). ♀ wing 255–280,



(ABOUT 4-5THS NATURAL SIZE.)

NESTLINGS IN DOWN OF: 1, The Black Tern (*Chlidonias n. niger*). 2, The Little Tern (*Sterna a. albigrons*). 3, The Common Tern (*S. h. hirundo*), buff type. 4, The Arctic Tern (*S. paradisea*), grey type. 5, The Roseate Tern (*S. d. dougallii*). 6, The Sandwich Tern (*S. s. sandwicensis*).

tail : outer 140-160, central 65-76, fork 64-86. Juvenile ♂ and ♀ wing 243-265, tail : outer 103-123, central 68-77, fork 32-51. Primaries : 1st narrow, pointed, and about two-thirds primary-coverts, 2nd longest, 3rd 10-20 mm. shorter, 4th 30-40 shorter, 5th 54-60 shorter. Rest of structure as Sandwich Tern but less than half tibia bare, webs between toes only slightly concave.

Soft parts.—Bill (ad. winter) most of upper mandible black, vermilion base, lower vermilion, crimson in angle, tip black, (ad. summer) crimson, tip black, (juv.) as winter but black portion browner and base more yellowish ; legs and feet (ad.) vermilion, (juv.) yellow-orange ; iris dark brown.

CHARACTERS AND ALLIED FORMS.—*S. h. tibetana* (Tibet, Turkestan) has darker upper- and under-parts. Distinguished from Arctic Tern by longer tarsus and usually longer bill and broader blackish line on inner web of outer primary, from Roseate at all ages by dark outer web of outer tail-feather, longer wing, as well as by other differences described under those species.

FIELD-CHARACTERS.—Adult slightly paler, with shorter outer tail-feathers, and longer tarsus than Arctic, but these differences hardly perceptible unless birds standing side by side. Bill in breeding season orange-red tipped with black, not crimson as in Arctic. Immature birds indistinguishable by colour. Best distinction afforded by cries ; call-notes “kitt, kitt” and “keerie” ; alarm-notes long drawn “pee-rah” and “pee-er” ; young just able to fly utter repeated “chit, chit, chit.”

BREEDING-HABITS.—Breeds in colonies, sometimes of vast extent, on shingle-banks, sand-dunes, salt-marshes, rocky islets, etc. *Nest.*—Scratched out hollow in sand, grass, rock, or shingle, sometimes quite unlined but occasionally carelessly lined with marram-grass, bents, feathers, etc. *Eggs.*—Generally 3, but often 2, while 4 are occasionally found. Higher numbers due to two or more hens. Varying from stone-colour to grey or brown, blotched and spotted with dark brown and ashy-grey. Erythristic type with red markings on warm ground is rare and blue eggs with or without markings also met with but more often. Average of 100 British eggs, 40.9×30.3 . Max. : 45×29.1 and 42.2×32.5 . Min. : 35.7×28.3 and 40.5×27.7 mm. *Breeding-season.*—Most eggs laid end May and early June ; exceptionally by 10 or 12 May. *Incubation.*—By both sexes in turn. Period 20-22 days, average about 21 days. Single brooded.

FOOD.—Mainly small fish, among which have been recorded : young herrings (*Clupea*), whiting, coal-fish, codling, sand-eels (*Ammodytes*), plaice (*Pleuronectes*), lump-suckers, 15-spined stickleback (*Gasterosteus*), also insects, including coleoptera, odonata, diptera (*Tipulidæ* and small flies), crustacea (shrimps), etc.

DISTRIBUTION.—*British Isles.*—Summer-resident (end of second week April (early dates Feb. 1 and 4, 1912, Kintyre ; Feb. 24, 1912,

Clyde ; March 22, 1913, Argyll), main arrival 10-14 days later. Breeding haunts deserted from mid-Aug., autumn passage to beginning Oct. (late dates Oct, 18, 1910, Leicester ; Oct. 27, 1911, Northumberland)). Occasional winter but a number recorded by Collinge (*Scot. Nat.*, 1921, p. 133). Breeds many places all coasts but rarely in O. Hebrides. North of Loch Broom on west side Scotland and in Ireland outnumbered by *S. paradisæa*, but on east side relatively common further northward and abundant Pentland Skerries, but sparse Orkneys, and only discovered breeding Shetlands 1901. Migrants occasional O. Hebrides and Fair Isle. Breeds some inland lakes and rivers Scotland and Ireland.

DISTRIBUTION.—*Abroad.*—Coasts, rivers, and lakes of Europe, from 70° north lat. to Mediterranean, Canaries, and Madeira (? no longer nesting), Azores, Tunisia, temperate Asia, south to Mesopotamia, east to Mongolia, Ob, and Yenesei, also temperate N. America. In winter in India, Ceylon, Malacca, China, and Africa, as well as parts of S. America. A closely allied local race inhabits Turkestan and Tibet, but its distribution is not sufficiently known, and its characters are somewhat variable.

STERNA PARADISÆA

441. *Sterna paradisæa* Brünn. THE ARCTIC TERN.

STERNA PARADISÆA Brünnich, Orn. Bor., p. 46 (1764—Christiansoe, Denmark).

Sterna macrura Naumann, Yarrell, III, p. 553 ; Saunders, p. 649.

DESCRIPTION.—*Adult male and female.* *Winter.*—Like winter Common Tern but rump, upper tail-coverts, and central tail-feathers white, outer pair of tail-feathers with inner webs white and no grey towards tip ; blackish line along shaft of inner web of 2nd (outer) primary narrower, on level with tip of 5th less than half width of inner web and on level with tip of 6th equal to width of outer web ;* secondaries with more white at tips and with scarcely any grey on inner webs of outer feathers ; lesser coverts not so dark. *N.B.*—Very few winter adults examined and only one in moult, viz. Oct. moulting body only. Moult appears to take place considerably later than in *S. h. hirundo*. *Summer.*—A complete moult takes place Feb.-Mar., but very few in moult have been examined. Like adult summer Common Tern but with longer white tips to lower scapulars ; underparts cold, pale slate-grey without any mauve tinge ; only two outer pairs of tail-feathers with grey outer webs, rest entirely white or with a tinge of grey on 3rd pair ; primaries as winter ; tips of secondaries with more white and outer feathers with very little grey on inner webs.

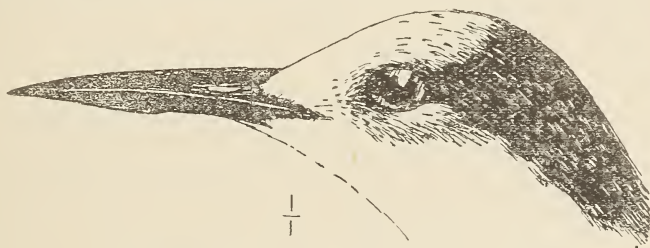
Nestling (Plate 10).—As Common Tern but dusky colour of throat generally (but not always) extends across fore-head. Ground-

* This character is somewhat variable and cannot always be relied upon.—H.F.W.

colour of upper-parts varies as in Common Tern but dark brown markings are usually closer. There is apparently no constant distinction as some nestlings of Arctic have no dusky on fore-head and some Common Terns have dusky fore-head.

Juvenile.—As Common Tern but rump and all tail-coverts white, not tinged grey; tail with more white, usually only 2 or 3 outer pairs with grey outer webs; blackish line on primaries narrow as in adult; secondaries with more white at tips, outer ones with little grey on inner webs and grey on outer webs considerably paler than in Common Tern; lesser coverts dark slate-grey, not so blackish as in Common Tern.

First winter.—Moult and abrasion as in Common Tern after which becomes much like adult winter but can be distinguished by juvenile wings and tail and other retained juvenile feathers. *First*



The Arctic Tern (*S. parasæva*) in 1st summer, i.e. one year old.

summer.—Moult as in Common Tern after which becomes like *winter* adult Arctic but fore-head and crown often speckled with black (some feathers black or tipped black), under-parts often with a good deal of grey but sometimes entirely white, outer tail-feathers often (but not always) with grey on inner webs at tip and inner tail-feathers usually ash-grey on outer webs; primaries as adult; secondaries with less white and slightly darker grey than adult but more white and paler grey than in Common Tern; lesser coverts slate-grey fringed hoary, paler than in Common Tern.*

Measurements and structure.—♂ wing 265–282 mm., tail: outer feather 170–200 (one 215), central 70–80, depth of fork 90–138, tarsus 15–17, bill from feathers 30–33 (12 measured). ♀ wing 260–275, tail: outer 158–185, central 66–75, fork 92–117. Juvenile ♂ and ♀ wing 226–252, tail: outer 105–125, central 65–70, fork 40–55. Primaries: 1st narrow, pointed, and about two-thirds primary coverts, 2nd longest, 3rd 12–22 mm. shorter, 4th 30–45 shorter, 5th 55–70 shorter. Rest of structure as Common Tern.

Soft parts.—Bill (ad. winter) blackish, (ad. summer) blood-red,

* First summer birds with white fore-heads (*S. portlandica* Ridgway) seem more frequent in this species than in *S. hirundo*, and this, perhaps, indicates that the latter frequently resemble adults in their first summer. A number of *paradisæa* in this plumage were noted as breeding by Lord W. Percy in N.E. Siberia in July, 1914 (one shot at nest and other skins in Brit. Mus.), and also by Jourdain in Spitsbergen.—H.F.W.

tip very occasionally blackish, (juv. and 1st summer) black, base of lower mandible usually dull crimson; legs and feet (ad. winter) blackish, (ad. summer) coral-red, (juv.) reddish-orange, (1st summer) very dark crimson, blackish in front of tarsus; iris dark brown.

CHARACTERS.—No subspecies. Birds from Antarctic, described as distinct (*antistrophe*), do not appear to differ from northern examples. Distinguished from Common and Roseate Terns at all ages by shorter tarsus and usually shorter bill, from Common by usually narrower blackish line on inner web of outer primary and by other differences described above, from Roseate by dark outer web of outer tail-feather, longer wing, and other differences described under that species.

FIELD-CHARACTERS.—Difficult to distinguish in the field from Common (*q.v.*). Call-notes a sharp "tchick, tchick, tchick," and a clear hawk-like whistle; alarm-note harsh, short "kare" or "kaah."

BREEDING-HABITS.—Breeds generally on rocky islets in British Isles but also occasionally by fresh-water lakes. *Nest.*—Usually none, eggs laid in hollow in rock or sand. *Eggs.*—Normally 2 and occasionally 3 or rarely 1 only. Usually more boldly marked than those of Common Tern: varying from stone-colour to pale blue or light to dark brown, blotched and spotted with rich dark brown and ashy shellmarks, Erythristic variety also occurs in the species. Average of 100 eggs, 40.7×29.5 . Max.: 47×29 and 44.7×32.2 . Min.: 35.5×28 and 36.6×27.4 mm. *Breeding-season.*—Usually from early June or end of May onward. *Incubation.*—Shared by sexes. Period 20 days (Paynter). Single brooded.

FOOD.—Largely small fish: including the genera *Clupea*, *Gasterosteus*, etc. Also various species of crustacea (*Gammarus*, *Clio*, *Hippolyte*, etc.); mollusca and insects (coleoptera, lepidoptera, and larvæ, diptera and larvæ, etc.), and annelids.

DISTRIBUTION.—*British Isles.*—Summer-resident (end April to 4th week Oct.). *England and Wales.*—Breeds only Farne Isles (Northum.), Scilly Isles, three groups of islets off Anglesey, Walney (Lancs.), and Isle of Man. Elsewhere passage-migrant (end April to end May and early Aug. to end Oct.) and often inland. *Scotland.*—Breeds all coasts and groups of islands, and outnumbers *S. hirundo* on west side north of Loch Broom and in Orkneys and Shetlands, and is chief breeding species O. Hebrides. *Ireland.*—On coasts and some lakes. More numerous than *S. hirundo*.

DISTRIBUTION.—*Abroad.*—Breeds in Iceland, Færoes, Lapland, Finland, Estland, coasts of North Sea south to Holland, Spitsbergen, Franz Josef Land, north Russia, coasts and lower courses of rivers of Siberia east to Anadyr and Commander Is. Also Greenland and N. America from Alaska and British Columbia to Maine. (Breeding-places near Rugen in Baltic and in Massachusetts abandoned). Migrant in winter on coasts of Africa, to New Zealand, and Antarctic seas; apparently no record for south Asia.

STERNA ALBIFRONS*

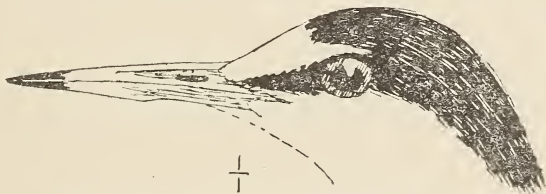
442. *Sterna albifrons albifrons* Pall.—THE LITTLE TERN.

STERNA ALBIFRONS Pallas, in Vroeg's Cat. Verzam. Vogelen, etc., Adumbratiuncula, p. 6 (1764—Holland).

Sterna minuta Linnæus, Yarrell, III, p. 558; Saunders, p. 651.

Sterna minuta minuta, Hand-List (1912), p. 195.

DESCRIPTION.—*Adult male and female. Winter.*—Fore-head and lores white; crown ash-grey tinged brownish; nape and extending along lower sides of crown to back of eye brown-black, feathers slightly tipped white; in front of eye black-grey patch; rest of upper-parts blue-grey but back of neck whitish and rump and upper tail-coverts slightly paler than mantle and scapulars; whole under-parts white; tail-feathers: two central pairs grey as rump, outer pair white, rest with inner webs and bases and edges of outer webs white and rest



The Little Tern (*Sterna a. albifrons*). Adult, summer.

of outer webs grey; primaries: two and sometimes three outer ones (i.e. 2nd, 3rd, and sometimes 4th) with blackish-grey (becoming almost black when worn) outer webs, tips, and wide line along shafts on inner webs, inner part of inner webs white, shafts dark brown, rest of primaries pale blue-grey, inner webs narrowly edged white, widening at bases, shafts greyish; secondaries with white inner webs and tips and grey outer webs and narrow portion of inner webs along shafts; primary-coverts: outer two or three dark grey becoming blackish by wear as outer primaries, rest pale blue-grey; greater and median coverts pale blue-grey, lesser coverts dark (blackish) grey, edged pale blue-grey. This plumage is acquired by complete moult Aug.—Dec. N.B.—Very few winter examples available for examination. *Summer.*—Another complete moult takes place Jan.—Mar., occasionally not complete April. N.B.—Very few in moult examined. Like winter but fore-head white extending in a point on each side of crown over eye; wide stripe through lores, over eye and rest of crown to level of lower edge of eye and nape jet-black; rump and upper tail-coverts usually white but sometimes whitish ash-grey; tail-feathers usually all white, but sometimes some tinged ash-grey; lesser coverts blue-grey as rest of coverts; rest of plumage as winter.

* *Sterna albifrons* has two years priority over *Sterna minuta* of Linnæus, who was evidently not yet acquainted with the species in 1758.—E.H. J

Nestling (Plate 10).—Down rather shorter than in Common Tern with shorter fine hair-like tips. Upper-parts pale sandy-buff mottled brown with no definite pattern but sometimes taking form on crown of three narrow parallel streaks and on mantle of two ; under-parts white, throat sometimes tinged pale sandy-buff.

Juvenile.—Fore-head and lores sandy-buff ; dusky black line round eye and short white patch over eye ; top of crown sandy-buff spotted or streaked dusky-black, feathers being blackish subterminally, nape and sides of crown behind eyes brown-black, feathers very narrowly fringed buffish-white ; back of neck buffish-white ; mantle and scapulars sandy-buff, feathers with U-shaped brown subterminal bars, basal part of feathers grey and upper scapulars more broadly barred, but lower scapulars ash-grey, tipped white without bars ; back, rump, and upper tail-coverts ash-grey (back darker), feathers tipped white (at first with buff tinge) and sometimes with faint brown subterminal marks ; under-parts white ; outer tail-feathers white, rest ash-grey, edged white (tinged sandy-buff at first), and with dark brown subterminal patches ; primaries as adult but much darker grey and white edging at tips broader ; secondaries as adult but with darker shaft-streaks ; primary-coverts, bastard-wing and feathers along front edge of wing blackish-grey, fringed hoary ; greater coverts grey fringed sandy-buff to white, innermost and innermost secondaries barred as upper scapulars ; median coverts grey, tipped sandy-buff and with faint brown subterminal marks ; lesser coverts dark grey, fringed hoary. N.B.—Sandy-buff of upper-parts and wing-coverts becomes almost white by wear.

First winter.—Like adult winter but usually a few juvenile body-feathers retained, tail-feathers, primaries, and secondaries as juvenile but some innermost secondaries like adult, wing-coverts mostly like adult but lesser coverts and feathers along front edge of wing darker. The juvenile body-plumage, lesser and median wing-coverts, innermost greater, and some innermost secondaries and central tail-feathers are moulted Aug.–Oct. N.B.—Very few winter examples examined. *Summer*.—A complete moult takes place as in adult after which bird apparently becomes like adult but those birds with 3 outer primaries blackish, lesser coverts rather dull blue-grey and some dark feathers along edge of wing may be 1st summer.

Measurements and structure.—♂ wing 164–180 mm., tail : outer feather 75 (one 66)–95, central 43–48, depth of fork 23–50, tarsus 15–18, bill from feathers 27–32 (12 measured). ♀ wing 164–180, tail : outer 74–85, central 42–48, fork 28–41. Juvenile ♂ and ♀ wing 160–173, tail : outer 56–65, central 42–46, fork 11–20. Primaries : 1st narrow, sharply pointed, and about two-thirds primary-coverts, 2nd longest, 3rd 5–14 mm. shorter, 4th 17–27 shorter, 5th 32–42 shorter. Rest of structure as Sandwich Tern but gonys very long (about half length of bill) and very gently sloped up to tip, angle not prominent.

Soft parts.—Bill (ad.) yellow, tip black, (juv.) brown, cutting edges of upper and basal half of lower very dull yellow; legs and feet (ad.) orange, (juv.) brownish-yellow; iris dark brown.

CHARACTERS AND ALLIED FORMS.—*S. a. saundersi* (coasts Sind, Baluchistan) has grey rump and tail, more black and white outer primaries (usually 3), brownish-yellow bill and feet; *S. a. sinensis* (China to Australia) has shaft of outer (2nd) primary white and usually longer tail; *S. a. antillarum* (east coasts N. America) has rump and tail grey; *S. a. browni* (west coasts N. America) has grey tinge on under-parts. Small size distinguishes Little from other British Terns.

FIELD-CHARACTERS.—Resembles last three in general habits but differs in appearance by smaller size, orange-yellow feet and bill, and white fore-head throughout nesting-season. Characteristic cries, "skerrek," and, at nesting-place, "tiri-wiri, tiri-wiri, tiri-wiri"; alarm-note a rasping "quek."

BREEDING-HABITS.—Breeds in colonies, usually small, on sand or fine shingle near shore. *Nest*.—Mere scratching in sandy ground. *Eggs*.—2 or 3, four rarely recorded, stone-colour ranging to bluish or brownish with dark blackish-brown or deep brown spots and occasional blotches, and ashy-grey shellmarks. Average of 100 eggs, 32.3×23.8 . Max.: 36×23.6 and 33×25.6 . Min.: 30×23 and 30.8×20.8 mm. *Breeding-season*.—Late May and early June. *Incubation*.—By both sexes. Period 20–22 days (Lewis). Single brooded.

FOOD.—Almost entirely small fish (*Ammodytes*, *Gasterosteus*, *Cyprinus*, etc.).

DISTRIBUTION.—*British Isles*.—Summer-resident (mid-April (main arrival end April) to end Sept. or 1st week Oct., exceptionally later). Breeding colonies of various sizes here and there south and east coasts England. A few pairs Forth, increasing Tay, a few Aberdeen, fair number Moray Firth, but doubtful breeder northwards on mainland, but appears to breed Orkneys, though only straggler Shetlands. On west side colonies from Cornwall to Solway, but does not now breed northwards on mainland, though it does in Tiree, and has in Barra since 1901–3, in N. Uist in 1907, possibly in Lewis in 1907, and in another O. Hebrides since 1885 or 1886. Occurs inland on passage (mid-April to end May and end July to end Sept.). Breeds in Ireland on coasts of Leinster, Ulster, and Connaught.

DISTRIBUTION.—*Abroad*.—Breeds on shores of south Sweden to Mediterranean and coasts of N. Africa, in Canaries and Madeira. Russia from Petrograd to Black and Caspian Seas, east to Persia, west Siberia and south to Baluchistan and N.W. India. Migrant which appears to winter in Africa (Somali coast, apparently Seychelles and Aldabra) and India. Little Terns also nest in tropical Africa, but seem to belong to different subspecies not yet cleared up. Other subspecies inhabit east Asia from Corea to

Hainan, Moluccas, New Guinea, Australia, westwards to Burmah and Ceylon ; near Karachi ; east coast of N. America from Massachusetts to Mexico, Bahamas, W. Indies to Aruba and Bonaire, Margarita and Trinidad, also north-east Brazil ; west coast of N. America to Guatemala.

STERNA FUSCATA *

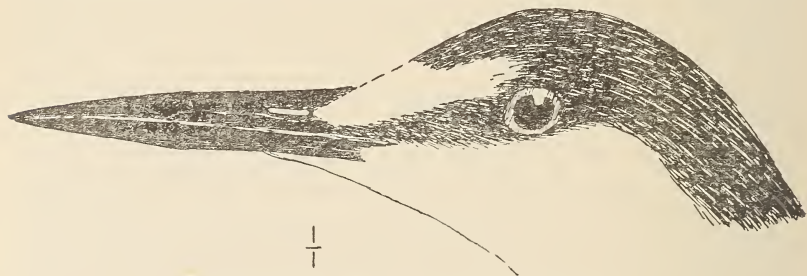
443. *Sterna fuscata fuscata* L.—THE SOOTY TERN.

STERNA FUSCATA Linnæus, Syst. Nat., ed. xii, i, p. 228 (1766—Dominica. Ex Brisson).

Sterna fuliginosa Gmelin, Syst. Nat., i, ii, p. 605 (1789—"Habitat in mari atlantico, americano, indico, australi." Selected typical locality : New York, type in Mus. Lever., fide Latham).

Sterna fuliginosa Gmelin, Yarrell, iii, p. 562 ; Saunders, p. 653 ; Hand-List (1912), p. 196.

DESCRIPTION.—*Adult male and female. Winter and summer.*—Fore-head and extending on to sides of crown over eyes in U-shape white ; crown and nape and broad line through lores and over eye jet-black ; rest of upper-parts brown-black but feathers on back of neck with white basal portions not entirely concealed ; whole under-parts (extending to sides of lower-neck) white with an ash-grey tinge on lower flanks, belly, and under tail-coverts ; tail as upper-parts but inner webs paler brown and greyish basally, outer pair mostly white



The Sooty Tern (*Sterna f. fuscata*). Adult, summer.

with about distal half of inner web dark brown ; primaries brown-black, inner webs browner and greyish basally ; secondaries same but about proximal two-thirds of inner webs white ; wing-coverts as rest of upper-parts, but narrow line of lesser coverts along edge of wing white. A full moult appears to take place in autumn but material is insufficient to determine whether there are two moults in the year, birds with white edges to feathers of fore-part of crown appear to me not adult.

Nestling.—Down with rather long rami but hair-like tips short and not so fine as in most Terns and filaments often joined together at tip as in Roseate. Whole appearance of down thus

* The name *fuscata* must be accepted, as there is no valid reason for its rejection.—E.H.

rather coarse. Whole upper-parts, sides of head, and sides of neck speckled grey-white and grey-black with varying amount of buff, latter, usually confined to tips of down, is often absent; upper part of throat as upper-parts but rest of under-parts white.

Juvenile.—Whole upper-parts black-brown, feathers of crown with very narrow pale buff tips (sometimes so narrow as to be scarcely noticeable, and soon becoming worn), those of upper-mantle with slightly broader but still very narrow tips, those of lower-mantle, back, rump, and upper tail-coverts broader and those of scapulars still broader and whiter; under-parts brown often washed ashy and becoming greyer by wear, round vent greyish-white, under tail-coverts blackish-grey, feathers tipped buff-brown; under wing-coverts and axillaries blackish-grey, feathers fringed ash; tail-feathers brown-black, inner webs browner, extreme tips with small buffish-white spot; primaries as adult; secondaries as adult but inner webs white only at base and innermost feathers tipped white as wing-coverts; greater and median coverts tipped buffish-white; lesser only very narrowly fringed buffish-white.

First winter.—Fore-head and lores brown-black, feathers fringed grey giving a hoary appearance; crown brown-black; mantle and back same but feathers edged white; under-parts grey-brown more hoary than juvenile; lesser and median coverts brown-black; rest of plumage as juvenile. The juvenile body-feathers and some median and lesser wing-coverts are moulted in winter (Dec.) but not wings and tail. N.B.—Very few 1st winter birds available and none fully moulted. Subsequent plumages are uncertain owing to want of material but apparently next moult is complete and takes place in 1st summer after which bird becomes like adult but usually has some sprinkling of white on fore-part of crown and lores, some feathers of mantle very narrowly edged white, sometimes some brown-tipped feathers on under-parts and outer tail-feathers with dusky outer webs with some grey-white at tip.

Measurements and structure.—♂ wing 275–310 mm., tail: outer feather 157–173, central 71–86, tarsus 22–25, bill from feathers 39–48 (14 Atlantic birds measured but in all except four outer tail-feathers broken and not measured). ♀ wing 272–290, tail: outer 158–180, central 72–78. Primaries: 1st narrow, pointed, and about half primary-coverts, 2nd longest, 3rd 2–12 mm. shorter, 4th 20–30 shorter, 5th 42–53 shorter. Tips of secondaries more pointed than in Sandwich Tern and inner feathers shorter, equalling 9th primary. Other structure similar to Sandwich Tern but bill proportionately broader at base.

Soft parts.—Bill, legs, and feet black; iris dark brown.

CHARACTERS AND ALLIED FORMS.—A number of forms have been described (*S. f. crissalis* Pacific coast America, *S. f. oahuensis* Hawaia, *S. f. serrata* New Caledonia, *S. f. infuscata* East Indies, and others) but the characters ascribed do not seem constant except in birds from N. Pacific which have rather more grey on under-parts

while those from S. Pacific have, also longer outer tail-feathers and rather longer bills. Distinguished from other British Terns by black upper-parts.

BREEDING-HABITS.—Breeds often in enormous colonies, chiefly on islands. *Nest.*—A mere hollow in sand or shingle or ledge of rocky cliff. *Eggs.*—Normally 1 only but occasionally 2 found together or even 3, but probably by other hens: ground varies from white to pinkish, sometimes heavily blotched but at times finely spotted with sienna or deep chestnut and ashy-grey. Average of 31 eggs, 50.1×35.3 . Max.: 57.1×37 and 52×38 . Min.: 43.7×33.5 and $48-32.4$ mm. *Breeding-season.*—Varies according to latitude: from April to October. *Incubation.*—By both sexes, each bird sitting for 24 hours. Period 26 days (Watson). Single brooded.

FOOD.—A British-killed specimen had sand-eels (*Ammodytes*) but small cephalopoda (*Sepiola*) also taken.

DISTRIBUTION.—*England.*—Nine. Tutbury near Burton-on-Trent (Staffs.), Oct., 1852. Near Wallingford (Berks.), June 21, 1869. Near Bath (Somerset), Oct. 4 or 5, 1885 (Saunders, p. 653). Near Brandon (Suffolk), Mar. or April, 1900 (W. G. Clarke, *Zool.*, 1903, p. 393). Hulme, Manchester (Lancs.), Oct. 9, 1901 (Saunders, *Bull. B.O.C.*, xii, p. 26). Near Barmouth (Merioneth), Aug. 17, 1909 (F. C. Rawlings, *Zool.*, 1909, p. 438). Brighton (Sussex), April 24, 1911 (A. F. Griffith, *Bull. B.O.C.*, xxvii, p. 95; *Brit. B.*, v, p. 81). Jury's Gap (Kent), male April 9, female April 10, 1914 (J. B. Nichols, *Brit. B.*, ix, p. 98).

DISTRIBUTION.—*Abroad.*—Atlantic Ocean from shores of Florida, Louisiana and Texas, West Indian Islands to British Honduras, and Venezuela, also on Fernando Noronha, Ascension, and St. Helena. Hence casual Maine, Azores, and to west Europe: Piedmont, Verdun, Germany (once), in winter south to Falkland Islands. Replaced by subspecies as yet insufficiently elucidated in Indian and Pacific Oceans.

[NOTE.—A specimen of the LESSER SOOTY TERN, *Sterna anæthetus*, which is found in several forms (*S. a. melanoptera*, nesting Bahamas and W. Indies to W. Africa; *S. a. anæthetus*, Philippines to Ceylon and Australia; *S. a. fuligula*, Red Sea; *S. a. antarctica*, Seychelles to Laccadives; *S. a. nelsoni*, West Coast Central America) is alleged to have been taken on a lightship at the mouth of the Thames, Sept., 1875 (H. Saunders, *Zool.*, 1877, p. 213), but the evidence was not considered sufficiently perfect to warrant the introduction of the species as a British bird (*id.*, Yarrell, iii, p. 566). Two specimens of the NODDY TERN, *Anous stolidus stolidus* (L.) (*Sterna stolidus* Linnaeus, Syst. Nat., ed. x, i, p. 137 (1758—In the "American Sea": West Indian seas meant)), alleged to have been shot between Tuskar Rock and Dublin about 1830, were brought in *skinned* by the captain of a vessel, and the evidence is not considered sufficient by R. J. Ussher (cf. *List Irish Birds*, p. 48; *Brit. B.*, ii, p. 248). Another, alleged to have been shot on the Dee Marshes, is not authentic (*Birds Cheshire*, p. 229). *Anous stolidus stolidus* appears to be distributed throughout the Atlantic from Florida Keys and coast of Louisiana to Bahamas and West Indies, south to Brazil and Tristan da Cunha, but it has been suggested that it only winters in these southern latitudes. It is represented by allied forms in the Indian and Pacific Oceans.]

Genus XEMA Leach.

XEMA Leach, Ross's Voy. Baffin's Bay, App. p. LVII (1819—Monotype *X. sabini*).

Very much like a smaller species of *Larus* but tail deeply furcated. Two species, *X. sabini* and *X. furcata* from Galapagos Is.

XEMA SABINI

444. *Xema sabini* (Sabine)—SABINE'S GULL.

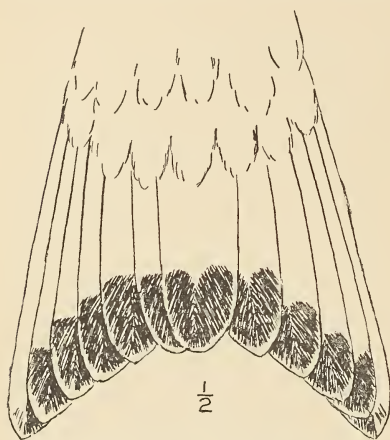
LARUS SABINI Sabine, Trans. Linn. Soc. London, XII, p. 522, pl. 29 (1818—Islands near Disco, west coast of Greenland).

Xema sabinii (J. Sabine), Yarrell, III, p. 573 ; Saunders, p. 657.

DESCRIPTION.—*Adult male and female.* *Winter.*—Fore-head, lores, and crown white ; nape and back of neck and sometimes under and behind eyes brown-black, feathers narrowly fringed white ; lower-neck extending on to upper-mantle white, tinged ash-grey ; rest of mantle, scapulars and back pale slate-grey, lower scapulars tipped white ; rump and upper tail-coverts white ; under-parts including axillaries and under wing-coverts white but coverts along edge of wing with black tips and outer webs ; tail white ; primaries : outer five (2nd to 6th) outer webs and rather greater width on inner webs black, inner portions of inner webs white but not reaching tips which are black with extreme tips white (2nd with very small white tip or no white, rest broad white tips), shafts black-brown, 7th white with proximal three-fourths of outer web black encroaching on to inner web as narrow line, shaft white, rest of primaries white (7th varying somewhat and sometimes much as 6th, and sometimes with black spot near tip, 8th sometimes like normal 7th) ; secondaries white, inner ones with part of outer webs slate-grey, which increases on innermost feathers, which have white only at tips ; primary-coverts black, inner ones with small white tips and innermost with white inner web and long white tip ; border of wing including bastard-wing black ; greater coverts slate-grey with long white tips and outer feathers mostly white ; median coverts slate-grey, outer ones with outer webs edged white ; lesser coverts slate-grey, at extreme edge and point of wing white. This plumage is acquired by complete moult Aug.—Dec. *Summer.*—Another complete moult takes place April—May, sometimes not finished June. Very few in moult examined ; one April moulting primaries in both wings and tail, another April tail but not primaries. As winter but whole head all round dark lead-grey with narrow black ring dividing it from pure white of back and sides of neck and under-parts ; mantle, scapulars, and wing-coverts rather darker slate-grey than winter.

Nestling.—(Not examined.) Upper-parts deep brownish-buff, crown with irregular black spots, smaller anteriorly, rest of upper-parts irregularly spotted, marbled or clouded blackish ; breast and belly pale dull buff. (Ridgway.)

Juvenile.—Fore-head and lores buffish-white ; fore-part of crown grey-brown, feathers fringed and tipped pale buff to buffish-white ; rest of crown and back of neck rather darker brown with narrower buff or buffish-white tips ; mantle, scapulars, and back same, feathers with broader tips and penultimate dark shading, bases brown-grey ; rump and upper tail-coverts white, lightly tipped buff ; under-parts white, but grey-brown of upper-parts encroaching on to sides of upper-breast ; tail white, broadly banded brown-black at tips, extreme tips narrowly fringed buff to buffish-



Tail of juvenile Sabine's Gull (*Xema sabini*).

white ; primaries : 2nd to 6th like adult but browner black, white on inner webs not so sharply cut off and white tips much smaller and absent from 2 or 4 outer feathers, 7th with more black than adult, being like 2nd to 6th but with longer white tip and white on inner web extended to tip and often a white oval spot near tip of outer web, shaft brown, 8th white with shaft usually brown and occasionally a brown-black spot near tip of outer web, rest of primaries white ; secondaries white, inner ones dark grey tipped white and innermost brown edged buff as scapulars ;

primary-coverts as adult but browner ; greater coverts dark slate-grey tipped white, outer ones edged white, inner tipped buff and innermost as rest of upper-parts ; median and lesser coverts as rest of upper-parts. N.B.—Fore-head and tips of feathers of upper-parts become whiter by wear.

First winter.—Not examined. *First summer*.—Whole head a mixture of white and lead-grey, some blackish-tipped feathers in position of ring in adult ; back of neck tinged grey ; usually some black at tips of some tail-feathers ; 7th primary much as described under juvenile ; one or two inner secondaries occasionally with dark centres ; lesser wing-coverts sometimes dark-grey along edge of wing ; rest of plumage as adult. N.B.—No moulting examples available but there appears to be a complete moult in spring. Birds with a few spots of black on tips of tail and 7th primary with black at tip but otherwise like adult may be 2nd summer but are more probably very forward birds in 1st summer.

Measurements and structure.—♂ wing 265–280 mm., tail : outer feather 113–123, central 90–100, depth of fork 20–28, tarsus 32–36, bill from feathers 23–27.5 (12 measured). ♀ wing 260–280. Juvenile ♂ and ♀ wing 250–270, tail : outer 100–115, central 80–90, fork 20–28. Primaries : 1st narrow, pointed, and about two-thirds

primary-coverts, 2nd longest, 3rd equal or 2-7 mm. shorter, 4th 15-25 shorter, 5th 32-45 shorter ; outer web of 2nd narrow. Outer secondaries shorter than 11th primary, tips fairly square, tips of rest sloped off on outer webs, innermost about as long as 7th primary, tips sharply rounded. Tail forked, 12 feathers, tips somewhat rounded. About one-third of tibia bare, tarsus slender, toes rather short, hind one minute and elevated, three front ones connected by slightly concave webs, claws short and somewhat dilated. Bill compressed, upper mandible straight for two-thirds then curving to tip, gonys sharply sloped up, angle not very prominent.

Soft parts.—Bill (ad.) black, tip yellow, (juv. dusky) ; legs and feet dusky-grey ; iris dark brown ; orbital ring and inside mouth vermilion.

CHARACTERS.—No subspecies. Forked tail distinguishes it from other British gulls, bill and white-tipped black primaries from any British Terns.

FIELD-CHARACTERS.—Quite a small bird, not much larger than Common and Arctic Terns, and rivalling them in lightness and activity on the wing. In breeding plumage black head and black edge to fore-wing are very conspicuous in flight and in combination with small size and white forked tail render it unmistakable. Has a harsh angry chattering note quite unlike that of any Tern. When at rest wings appear to be barred with black near tips. (F.C.R.J.)

BREEDING-HABITS.—Haunts islets in swampy tundra or off coast, often in close proximity to ice and in company with Arctic Tern. *Nest*.—Slight, composed of stalks and bits of vegetable matter arranged in a scrape in marshy ground. *Eggs*.—Normally 3, sometimes 2 only. Brownish or greenish-olive in ground-colour, rather sparingly spotted and blotched olive-brown. Average of 50 eggs, 44.43×32.24 . Max. : 49.2×33 and 43.2×33.9 . Min. : 41.0×31.5 and 43.6×29.8 mm. *Breeding-season*.—In Alaska from end May and first week June, but in high latitudes of Old World (Spitsbergen, etc.) about July 7. *Incubation*.—Apparently by both sexes. Period unknown. Probably single brooded ; undoubtedly so in high north.

FOOD.—Insects and their larvæ, chiefly diptera ; also mollusca (*Mytilus*), small crustacea, annelida and, according to Bent, small fishes.

DISTRIBUTION.—*British Isles*.—Scarce autumn and winter-visitor, rarely in spring and summer. Most frequent Yorks. and Norfolk, many recorded at intervals elsewhere, even in inland counties, but rarer Scotland (unrecorded O. Hebrides) and only twelve Ireland (Dublin Bay seven, Belfast Lough three, Donegal Bay one, Lough Derg one). Adults very rare.

DISTRIBUTION.—*Abroad*.—Breeds on coasts of Siberia : Anadyr, delta of Lena, Taimyr Peninsula, on Spitsbergen, and on coast of

Alaska to north Greenland. Winters in more southern latitudes from Europe to Bermudas and Texas, and about 12° south lat., and even Peru. Not rare as visitor to Atlantic coasts of France, casual in Holland, Denmark, Heligoland, Slesvig, west Germany, Switzerland, and Austria-Hungary.

Genus RHODOSTETHIA Macg.

RHODOSTETHIA Macgillivray, Man. Brit. Orn., II, p. 252 (1842—Monotype *R. rossi=rosea*).

In general much like *Larus* but tail cuneiform (wedge-shaped) and pointed. Bill very small and slender, much shorter than head. Wings very long and pointed. One species.

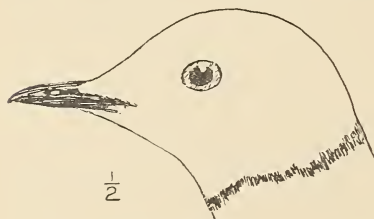
RHODOSTETHIA ROSEA

445. *Rhodostethia rosea* (Macgill.)—THE WEDGE-TAILED GULL.

LARUS ROSEUS Macgillivray, Mem. Wernerian Soc., v, p. 249 (1824—loc. not stated but descr. from specimen from Melville Peninsula).

Rhodostethia rosea Macgillivray, Yarrell, III, p. 579; Saunders, p. 659.

DESCRIPTION.—*Adult male and female.* *Winter.*—Fore-head, crown, back and sides of neck extending to sides of upper-breast rose-white, tinged grey, tips of feathers being ash-grey, on each side of back of neck a few feathers tipped grey-black; feathers in front of and under eye and a few over eye lightly tipped grey-black, giving mottled appearance; mantle, scapulars, back, and wing-coverts blue-grey; rump and upper tail-coverts white (sometimes tinged rose); under-parts rose-white; axillaries white; under wing-coverts blue-grey; tail-feathers white tinged rose especially at base; primaries blue-grey, shafts grey, outer web of outer (2nd) black except at tip and extreme base, inner webs and tips of inner feathers white; secondaries blue-grey with long white tips, innermost blue-grey as wing-coverts.



The Wedge-tailed Gull (*Rhodostethia rosea*).
Adult, summer.

Summer.—Fore-head, crown, back, and sides of neck, rump,

upper tail-coverts and under-parts rose-white, rose-colour being strongest on breast and belly; encircling neck a narrow ring of black, feathers being tipped black; (no black round eye); rest of plumage as winter. N.B.—Very few adults and no moulting ones examined.

Nestling.—Covered with fairly long, soft down with fine silky tips. Upper-parts buff, crown yellowish, closely spotted and mottled with blackish, dusky line on each side of gape, black line over eye and patch behind eye, a few black spots on throat; chin

whitish-buff; throat yellow-buff; rest of under-parts unspotted pale buff, whitish in centre (only one examined).

Juvenile.—(Not examined.)

First winter.—Fore-head and patch over and behind eye white; crown, nape, mantle, and scapulars ashy blue-grey, sometimes some retained juvenile feathers (brown narrowly tipped white) on mantle and scapulars and a few tipped brown on crown, lower scapulars brown with long white tips and white bases; back and upper-rump pale ash-grey, feathers broadly tipped brown; rest of rump and upper tail-coverts white, often with a few brown mottlings; lores white; round eye mottled black-brown and on hinder ear-coverts a black-brown patch (feathers tipped black-brown); under-parts white but sides of upper-breast tinged ash-grey and sometimes a few brown-fringed juvenile feathers on breast; axillaries white; under wing-coverts ash-grey, those on outer edge of wing brown or tipped brown; tail white, three (sometimes only two) middle pairs with broad brown-black tips, slightly mottled white at extreme tip, two (and sometimes three) outer pairs entirely white, third (or fourth) pair with brown-black mottling at tip; primaries: 2nd to 4th (i.e. outer three) with outer webs, tips and broad line along shaft on inner webs brown-black, tinged grey basally, base and inner part of inner webs pale ash-grey shading to white distally, 5th with white mark of varying size on outer web proximal to black tip, rest of outer web and line along inner web grey-black or blackish-grey, 6th and 7th same but with more white on outer webs and less grey-black, shafts black-brown, 8th and 9th white, tipped brown-black with brown and white shafts, 10th and 11th white sometimes tipped brown-black; secondaries with basal halves pale ash-grey and distal halves white, inner feathers with varying amount of dark brown on outer webs and innermost dark brown narrowly edged white and extreme bases white; primary-coverts brown-black, narrowly tipped white; bastard-wing and feathers along edge of wing brown-black; greater coverts pale ash-grey, tips white, varying amount of brown on outer webs increasing on inner feathers, innermost as innermost secondaries; median and lesser coverts black-brown, narrowly edged creamy-white, and lesser coverts along edge of wing often mostly ash-grey, sometimes narrowly tipped black-brown. The juvenile body-plumage is moulted in late summer but not wings or tail. Material is altogether insufficient to determine subsequent moults and plumages.

Measurements and structure.—♂ wing 248–260 mm., tail 90–108, tarsus 28–30, bill from feathers 18–20 (3 measured). ♀ wing 238–263 (5 measured). Primaries: 1st narrow and about two-thirds primary-coverts, 2nd longest, 3rd equal or 1–2 mm. shorter, 4th 15–17 shorter, 5th 30–38 shorter; outer web of outer primary narrow. Secondaries as Sabine's, but innermost shorter equalling 8th or 9th primary. Tail wedge-shaped, 12 feathers, central pair long, next pair about 20 mm. shorter, rest about equal to each other and 25–30 shorter than central, tips rounded, in young birds

central pair not so long. About one-fourth of tibia bare. Rest of structure as Sabine's but bill considerably smaller.

Soft parts.—Bill (ad.) black, (juv.) brownish at base; gape and orbital ring (ad.) vermilion; legs and feet (ad.) orange-red, (juv.) flesh-brown; iris brown.

CHARACTERS.—No subspecies. Wedge-shaped tail and small bill distinguish species.

BREEDING-HABITS.—Nests usually in colonies on little low-lying island in swampy tundra, frequently in company with Arctic Terns.

Nest.—Built of dry grasses and *Carex*; sometimes with a few leaves of *Betula* or *Salix*, or even moss, till it reaches about 5 to 8 in. above wet surface of bog. *Eggs*.—Normally 3, but sometimes 2 only: not unlike those of Sabine's Gull: ground-colour greenish-olive, sparingly blotched with umber-brown. Average of 36 eggs (Buturlin), 43.3×31.6 . Max.: 45.8×32.1 and 44.5×32.9 . Min.: 38.6×31 and 43×30 mm. *Breeding-season*.—Early June in Kolyma delta. *Incubation*.—Partly at any rate by female. No information as to period. Single brooded.

FOOD.—On breeding ground apparently insectivorous. Buturlin records coleoptera, diptera (gnats), and other insects. A bird shot by Nansen threw up two shrimps.

DISTRIBUTION.—*England*.—One near Tadcaster (Yorks.), Dec. 22, 1846, or Feb. 1847 (W. Milner, *Zool.*, 1847, p. 1694, and *cf.* p. 1784; Saunders, p. 659; *Birds Yorks.*, p. 665).

DISTRIBUTION.—*Abroad*.—Breeds in delta of Kolyma River and at mouth of Indigirka and Alaseja in north-east Siberia and doubtless other places on arctic shores of Asia and probably of America. Has been found in many places in arctic seas and casual visitors have been obtained in Færoes, Heligoland, Norway (once), France, and near Sardinia.

Genus LARUS L.

LARUS Linnaeus, *Syst. Nat.*, ed. x, i, p. 136 (1758—Type by subsequent designation of Selby, *Cat. Generic and Subg. Types*, p. 48, 1840, *L. marinus* L.).

Gulls of various sizes, bill strong, laterally compressed, upper with tip pointed and bent down over lower. Nostrils longitudinal, beginning near base. Tarsus as long as middle toe with claw or (mostly) longer, in front with scutes, otherwise reticulate, hind toe well developed. Wings long and pointed, first developed primary longest. Tail short, square. Sexes alike in colour, female generally smaller. Winter-plumage generally different on head and neck only, juvenile essentially different. About 44 species in all countries.

Key to species of genus LARUS.

(Adults in breeding plumage.)

- | | | | | |
|----|---|--|----|-----------------------------------|
| 1 | { | Head black or brown | 2 | |
| | | Head white | 6 | |
| 2 | { | Under wing-coverts all white | 3 | |
| | | Under wing-coverts slate-grey | 5 | |
| 3 | { | Wing over 400 mm. | | <i>L. ichthyaetus</i> , p. 741 |
| | | Wing under 400 mm. | 4 | |
| 4 | { | Bill red, tip of wing white | | <i>L. melanocephalus</i> , p. 738 |
| | | Bill black, tip of wing black | | <i>L. philadelphia</i> , p. 727 |
| 5 | { | Head black, first developed primary grey with white tip | | <i>L. minutus</i> , p. 730 |
| | | Head coffee-brown, first developed primary largely white with black tip | | <i>L. ridibundus</i> , p. 733 |
| 6 | { | First developed primary white or chiefly white | 7 | |
| | | First developed primary chiefly black or blackish | 8 | |
| 7 | { | Larger, bill 53-70 mm. | | <i>L. hyperboreus</i> , p. 765 |
| | | Smaller, bill 40-50 mm. | | <i>L. glaucoides</i> p. 769 |
| 8 | { | Bill greenish-grey to greenish-yellow, tip only yellow | | <i>L. canus</i> , p. 744 |
| | | Bill yellow with red spot near gonys | 9 | |
| 9 | { | Tip of wing 5-8 cm. pure white, bill very large, at gonys 22-27 mm. high | | <i>L. marinus</i> , p. 761 |
| | | Tip of wing black with white spots | 10 | |
| 10 | { | Generally larger, back bluish-grey | | <i>L. argentatus</i> , p. 748 |
| | | Generally smaller, back slate-grey or slate-black | | <i>L. fuscus</i> , p. 756 |

LARUS PHILADELPHIA

446. *Larus philadelphia* (Ord)—BONAPARTE'S GULL.

STERNA PHILADELPHIA Ord, in Guthrie's Geogr., 2nd Amer. ed., p. 319 (1815)—near *Philadelphia*, U.S.A.).

Larus philadelphia (Ord), Yarrell, III, p. 584 ; Saunders, p. 661.

DESCRIPTION.—*Adult male and female. Winter.*—Fore-head white ; crown white with mixture of dark grey on back of crown and a small spot in front of eye and large one on hinder ear-coverts ; back of neck ash-grey ; mantle, scapulars, and back blue-grey ; lower-rump, upper tail-coverts, whole under-parts and tail white (under-parts stated to have often a rosy tinge in life) ; primaries : 2nd (outer) white inner web and shaft, black outer web and tip, 3rd same but black tip longer and extending for a short distance down inner edge of inner web (outer web white but sometimes with varying width of black edging on distal half), 4th same but inner part of inner web grey and a small white spot at apex of black tip which extends in a short, narrow edging down both webs, 5th as last but white spot at apex slightly larger and whole of inner web grey, 6th as 5th, but both webs grey and shaft greyish, 7th blue-grey, black at tip restricted and extreme tip grey, 8th blue-grey shaft dark grey, tip of inner web edged black (sometimes sub-

terminal black spot or patch on outer web), 9th as last but with very narrow black edging at tip of inner web and sometimes none and no black on outer web, 10th and 11th blue-grey with blackish shafts (sometimes black at tip of inner web of 10th); secondaries blue-grey as upper-parts with black-grey shafts, innermost tipped ash-white; primary-coverts white with sometimes very fine black shaft-streaks; coverts along edge of wing and bastard-wing white; rest of coverts blue-grey as upper-parts. This plumage is acquired by complete moult Aug. to Nov. *Summer*.—A partial moult involving body-feathers only (not wing-feathers, wing-coverts or tail-feathers) takes place Jan. to April. As winter but whole head all round blackish-slate, narrow white line round posterior three-fourths of eye; back of neck white not ash-grey as winter; under-parts sometimes suffused pink especially it is said in life.

Nestling.—(Not examined.)

Juvenile.—Fore-head and sides of crown over eyes white; centre of crown brown, feathers slightly tinged buffish-white; back of neck white, feathers tipped brown; mantle, scapulars, and back with distal portions of feathers brown and tips buffish-white, broadest on scapulars, narrowest on back; rump and upper tail-coverts white; in front of eye a small black-brown spot and on hinder ear-coverts a large one; usually some buff-brown on sides of upper-breast otherwise under-parts white; tail white with broad subterminal brown-black band, which is broken or absent in outermost pair; primaries: 2nd (outer) as adult but inner web with broad black stripe along shaft extending not quite to tip, 3rd and 4th as 2nd but black stripe on inner web narrower and some white on base of outer web of 4th, 5th as adult but grey on inner web paler and duller and often some black near base of outer web, 6th as 5th outer web white or whitish-grey, 7th as 6th but more grey wash on outer web, 8th to 11th grey (not so blue-grey as adult) with grey tips and broad black subterminal bands; secondaries as inner primaries but black bands extending only half across inner webs and bases of feathers shading to white, innermost mostly black-brown with grey bases and pale buff to whitish tips; primary-coverts white with varying amount of brown-black subterminally and along shafts, outer feathers often mostly black with white tips; greater and median coverts blue-grey, tipped buff but innermost as innermost secondaries; lesser coverts brown-black narrowly fringed buffish, bases grey, uppermost series mostly grey and those along edge of wing white.

First winter.—Body-feathers as adult winter but wing-feathers, wing-coverts and tail as juvenile but tips of wing-coverts much worn and showing more blue-grey. The body-feathers are moulted Aug. to Nov., but not wings or tail. *First summer*.—The body-feathers are again moulted in early spring but not wings or tail. As first winter, but head usually a mixture of white and lead-grey but sometimes much as winter.

Second winter and summer.—As adults but some tail-feathers

sometimes with slight subterminal edging of black and some primary coverts with black shaft-streaks of varying width.

Measurements and structure.—♂ wing 264–276 mm., tail 100–106, tarsus 35–38, bill from feathers 28–31 (12 measured). ♀ wing 250–272, bill 27–31. Primaries : 1st narrow and about two-thirds primary-coverts, 2nd longest, 3rd 2–5 mm. shorter, 4th 15–23 shorter, 5th 36–40 shorter ; outer web of 2nd very narrow. Outer secondaries shorter than 11th primary, tips of outermost square, of rest with notched point, outer webs being sloped off, innermost between 7th and 9th primaries, tips sharply rounded. Tail almost square, 12 feathers, tips fairly square but more rounded in juvenile. About one-third of tibia bare, tarsus and toes slender; hind toe minute, elevated and free, three front ones connected by concave webs, claws short, rather blunt and slightly dilated on inner edge. Bill slender, compressed, upper mandible straight for rather more than half its length then curving down to tip, gonys sloped up to sharp tip, angle distinct but not very prominent. Nostrils sub-basal and slit-like.

Soft parts.—Bill black, inside mouth orange-vermilion ; legs and feet (ad. summer) orange-vermilion, (winter) flesh-colour, (juv.) dusky ; iris brown ; orbital ring black.

CHARACTERS.—No subspecies. In summer blackish-slate head and in all plumages dark bill and want of black on inner edge of inner webs of primaries distinguish it from *L. ridibundus*.

BREEDING-HABITS.—Haunts wooded districts and usually nests on side branches of spruce firs, 4 to 15 or 20 ft. from ground. *Nest.*—Built of small sticks, twigs, etc., lined grasses and moss. *Eggs.*—Normally 2 or 3, rarely 4, ovate, ground-colour varying from brownish-yellow to deep olive-buff, spotted and blotched with occasional scrawls of dark olive and umber-brown. Average of 29 eggs, 49.05×34.13 . Max. : 52.5×34 and 50×36 . Min. : 44.5×35 and 47×32.5 mm. *Breeding-season.*—From second week June till end of month. *Incubation.*—No information. Single brooded.

FOOD.—Largely insects and their larvæ, including lepidoptera (moth pupæ), diptera and larvæ (*Coleopa frigida*, maggots, etc.), hymenoptera (ants and pupæ), but also on coast, small crustacea, annelida and small fish.

DISTRIBUTION.—*British Isles.*—Seven. One near Belfast, Feb. 1, 1848. One Loch Lomond (Clyde) about end April, 1850. One Falmouth, Jan. 4, 1865, one Penryn, Jan. 10, 1865, and one Penzance (Cornwall), Oct. 20, 1890. One St. Leonards (Sussex) early Nov., 1870 (Saunders, p. 661). One St. Leonards, Nov. 3, 1913 (*Brit. B.*, VII, p. 235).

DISTRIBUTION.—*Abroad.*—Breeds in Arctic America from Alaska and north Mackenzie to British Columbia and south Keewatin. Winters from Maine to Florida, Texas, and Yucatan and on Pacific

coasts of North America as far south as Lower California and Mexico; on migration west to Kotzebue Sound and east to Ungava, casual in Bermudas and Bahamas, in Chile and Sandwich (Hawaiian) Islands. Once, winter 1845, Heligoland, once France.

LARUS MINUTUS

447. *Larus minutus* Pall.—THE LITTLE GULL.

LARUS MINUTUS Pallas, Reise d. versch. Prov. d. Russ. Reichs, III, p. 702 (1776—Beresof, Tobolsk).

Larus minutus Pallas, Yarrell, III, p. 589 ; Saunders, p. 663.

DESCRIPTION.—*Adult male and female.* *Winter.*—Fore-head, lores, and line over eyes white ; rest of crown and nape lead-grey, narrow line under and in front of eye and patch on hinder ear-coverts blackish-grey ; back of neck, mantle, scapulars, and back pale blue-grey ; under scapulars tipped white ; lower-rump and upper tail-coverts white ; under-parts white with patch of pale blue-grey on sides of upper-breast ; axillaries ash-grey ; under wing-coverts lead-grey becoming black or blackish on under primary-coverts and underside of wing-feathers ; tail white ; primaries pale blue-grey shading to lead-grey on inner part of inner webs, shafts grey, long white tips ; secondaries as primaries but shafts blackish-grey ; innermost secondaries and all wing-coverts pale blue-grey as mantle. This plumage is acquired by complete moult Sept.—Oct. and perhaps later. *Summer.*—The body-feathers are again moulted March—April (sometimes not quite complete June) but not wing-feathers, wing-coverts, or tail-feathers. As winter but whole head all round jet-black ; back of neck and upper-mantle white ; under-parts sometimes suffused pink ; no grey patches on sides of upper breast.

Nestling.—Closely covered with longish soft down with fine silky tips. Upper-parts and sides dark grey-buff, down with brown-black bases, with somewhat irregular and not very conspicuous spots and patches of brown-black in which down is buff at extreme tip (upper-parts thus much darker than in nestlings of other British Gulls) ; under-parts buff-grey, down with brown-black bases except along centre of breast and belly (only one examined).

Juvenile.—Fore-head, lores, broad line over eyes to nape white, a few feathers with small brown tips ; rest of crown, line in front of and under eye and patch on hinder ear-coverts black-brown ; mantle black-brown, feathers with white bases and narrowly tipped yellow-buff to cream ; scapulars same but long ones with long white tips ; back and upper-rump ash-grey, feathers tipped black-brown ; lower-rump and upper tail-coverts white, a few feathers with small brown spots near tips ; small dark brown patch on each side of upper-breast, otherwise whole under-parts including under wing-coverts white ; tail white with broad terminal brown-black band (extreme tips fringed buff-white), outer feathers with less black and outermost with no black or with small patch at tip of inner webs

only ; primaries : outer five with tips, outer webs, shafts and line along shafts on inner webs black, washed grey at bases, 2nd and 3rd with minute white spot at apex and 4th to 6th with larger spots, 7th with dark grey outer web, black shaft and irregular subterminal band and white tip and inner web, rest more white with less grey on outer webs and no black subterminal bands but often a black spot on outer web of 8th ; secondaries white with wide grey-black subterminal shaft - streaks, innermost mostly brown - black with white bases and narrow white tips ; primary-coverts grey-black, slightly tipped white, innermost mostly ash-grey ; coverts along edge of wing grey - black, outer ones with outer webs whitish ; greater coverts pale ash-grey, tipped white, innermost brown-black narrowly tipped pale buff, outermost narrowly edged dark grey on outer webs ; median coverts and lower lesser black-brown, narrowly tipped pale buff ; upper lesser broadly fringed grey-white, bases black-brown.



Juvenile Little Gull (*Larus minutus*).

First winter.—Head and upper-parts as adult winter but sometimes a few feathers with short brown tips and feathers of back fringed black-brown, some juvenile scapulars are frequently retained and often a few upper tail-coverts ; under-parts including under wing-coverts white but latter sometimes tinged grey ; wing-feathers, wing-coverts and tail as juvenile ; but tips of wing-coverts worn. The juvenile body-feathers are moulted Aug.-Oct., but not wing-feathers and wing-coverts and usually not tail-feathers, though occasionally two, or even three, middle pairs of tail-feathers are moulted, new ones being white as in adult. *First summer.*—Not examined but evidently wings and tail are as in first winter.

Second winter and summer.—Like adults but under-wing paler, 2nd primary with outer web grey-black and 4th to 6th with black penultimate marks, bands, spots or shaft-streaks (varying), some primary-coverts and some secondaries usually with dusky shafts or shaft-streaks. N.B.—It is possible that some birds in 2nd winter are indistinguishable from adults but the only one examined in moult from 1st summer to 2nd winter had new wing-feathers as above described.

Measurements and structure.—♂ wing 215–230 mm., tail 84–94, tarsus 25–29, bill from feathers 21–23 (12 measured). ♀ wing 210–226, bill 21–24. Primaries : 1st narrow, pointed and about two-thirds primary-coverts, 2nd and 3rd longest, 4th 4–9 mm. shorter, 5th 15–23 shorter. Other structure as Bonaparte's Gull.

Soft parts.—Bill (ad. summer) red-brown, (winter and juv.) blackish, inside mouth (ad.) orange ; legs and feet (ad. summer) vermilion, (ad. winter and juv.) red-brown to flesh ; iris dark brown.

CHARACTERS.—No subspecies. Distinguished from other British Gulls by its small size and in adult by blackish under-wing.

FIELD-CHARACTERS.—Adults in breeding-plumage suggest miniature Black-headed (or still more Mediterranean Black-headed) Gulls, but are at once distinguishable by their much smaller size (approaching Common Tern), entire absence of black on primaries, and dark under wing-surface, which is noticeable in flight. From Sabine's Gull, which is also quite small, it is distinguishable by its square tail, red bill and feet, and former also shows much black on front edge of wing. Immature birds lack dark under wing-surface, but much smaller dimensions distinguish them from our common species, and shape of tail from Sabine's, while Black-headed Gull at all ages has broad white margin to front edge of wing. (F.C.R.J.)

BREEDING-HABITS.—Breeds usually in colonies, sometimes in company with Terns and sometimes with Black-headed Gulls, either in tussocks in shallow water or on low sandbanks and islands. *Nest*.—Carelessly built of dead sedges, rushes, *Scirpus*, bits of reed, etc., among rushes or reeds, either in or close to water. *Eggs*.—2 to 3 normally, 4 or even 5, but quite exceptionally; not unlike those of Common Tern. Ovate, yellowish-buff to olive-brown in ground and spotted or blotched with dark brown and ashy shellmarks. Average of 119 eggs, 41.51×30.11 . Max. : 45.8×30.9 and 45×32 . Min. : 37×29 and 40.9×28.1 mm. *Breeding-season*.—Usually end May and early June, exceptionally mid-May in Central Europe : first fortnight of June in Gulf of Finland. *Incubation*.—By both sexes. Period unknown. Single brooded.

FOOD.—Insects (coleoptera, diptera, and probably neuroptera), but largely small fish and also small crustacea (shrimps) and sand-worms. Barley found in stomach of a British killed specimen.

DISTRIBUTION.—*British Isles*.—Irregular autumn and winter-visitor, occasionally spring and summer. Chiefly east coast England (sometimes numerous as 1866 and 1868 in Yorks., and winter 1869–70 on east coast), fairly frequent south coast, rarer Wales and northwards to O. Hebrides and Shetlands, not so rare east coast Scotland. Occasional inland. About twelve Ireland, chiefly near Dublin and Belfast, but one Londonderry, two Galway, one Meath.

DISTRIBUTION.—*Abroad*.—Breeds in north-east Europe from northern W. and E. Prussia, Denmark, Gotland, irregularly Öland, Gulf of Bothnia, central and northern Russia and Siberia east to Sea of Ochotsk. After breeding-season on seashores south to Mediterranean, Black and Caspian Seas, in east to mouth of Amur, casual India (once), interior of central Europe, Færoes, U.S. America (three), Mexico, Bermudas (twice).

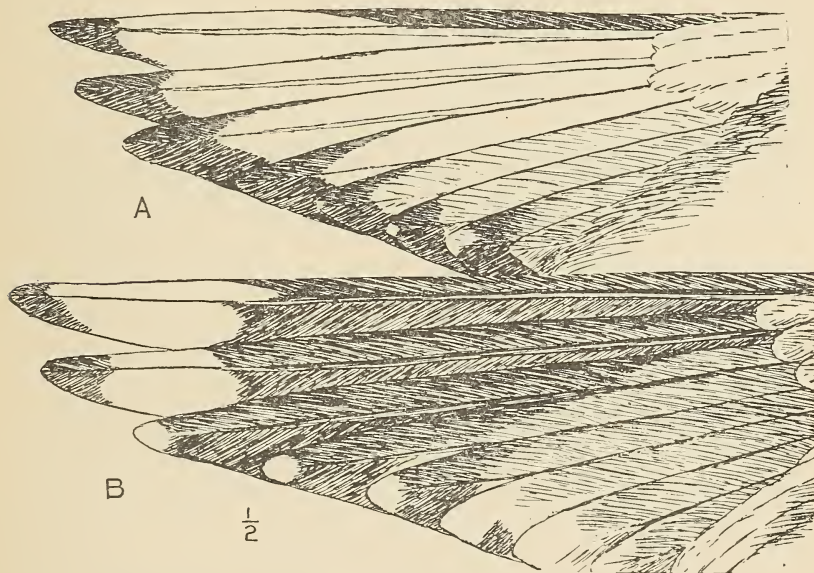
LARUS RIDIBUNDUS

448. *Larus ridibundus ridibundus* L.—THE BLACK-HEADED GULL.

LARUS RIDIBUNDUS Linnaeus, Syst. Nat., ed. XII, i. 225 (1766—"Habitat in Mari Europæo." Restricted typical locality: England—from first three quotations).

Larus ridibundus Linnaeus, Yarrell, III, p. 594; Saunders, p. 665.

DESCRIPTION.—*Adult male and female. Winter.*—Fore-head, lores, and fore-part of crown white, rest of crown and nape with varying amount of lead-grey or grey-brown intermixed, small patch in front of eye and larger patch on hinder ear-coverts of dark brown or grey-black and usually some specks under eye and often on lores ;



Portion of wings of adults of (A) The Black-headed Gull (*Larus r. ridibundus*),
(B) The Common Gull (*L. c. canus*).

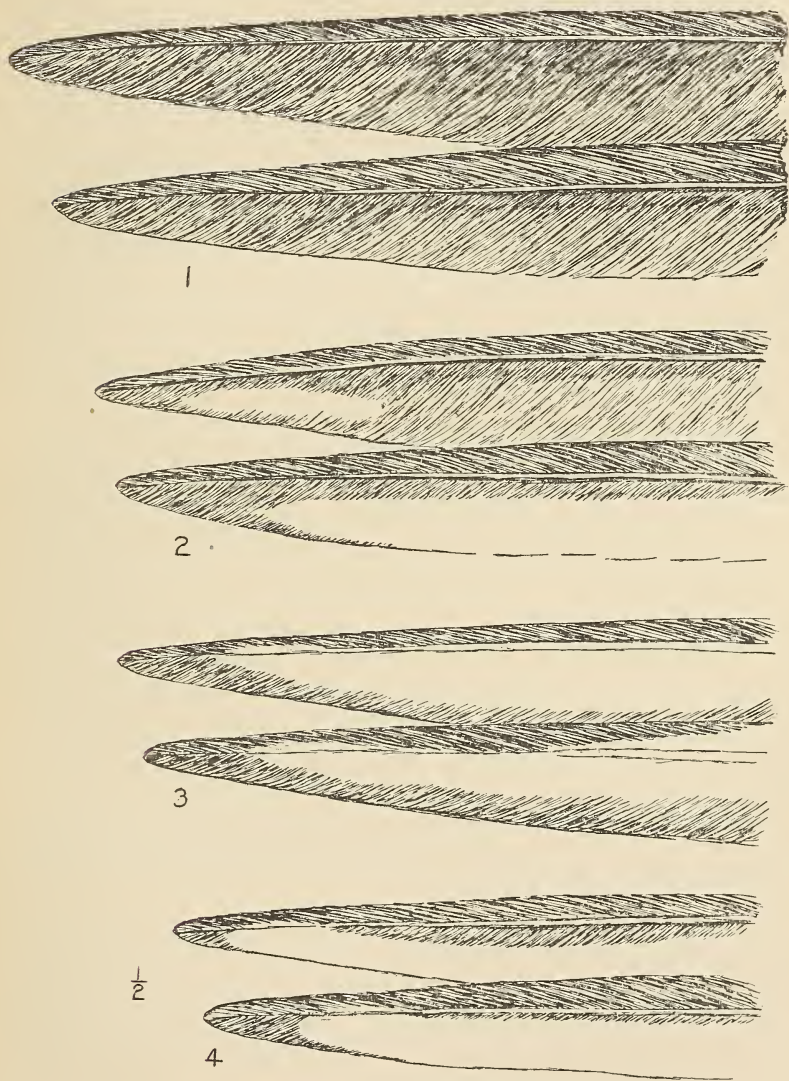
back of neck pale ash-grey; mantle, scapulars and back pale blue-grey; rump, upper tail-coverts, tail, and under-parts including axillaries white; under wing-coverts blue-grey, but those along edge and bend of wing white; primaries: 2nd (outer) white, shaft white, tip black, basal three-fourths of outer web black but not extending quite to shaft nor to tip, inner edge of inner web black varying in width and sometimes absent or reduced to very narrow fringe, 3rd as 2nd but either no black on outer web or a short, narrow edging on distal half, black on inner web wider and shading into grey towards shaft, 4th and 5th with white outer webs and

shafts, longer black tips extending up outer web as short narrow edging, usually with small white spot at apex, more grey on inner webs extending in 5th right up to shaft, 6th with outer web and shaft ash-grey to whitish ash-grey, inner web grey shading to blackish-grey on inner edge, tip black with white apex, 7th same but outer web grey and spot at apex larger (occasionally no black on outer web at tip), 8th as last but tip grey with a subterminal patch of black (varying in extent and occasionally absent) on inner web and occasionally a spot on outer web, 9th to 11th all grey with occasionally a blackish edging near tip of inner web ; secondaries ash-grey shading to white at base and on inner edge of inner webs of inner feathers ; outer primary-coverts, bastard-wing and feathers along edge and bend of wing white, rest of wing-coverts pale blue-grey as mantle. This plumage is acquired by complete moult July (occasionally June) to Oct., and even Nov. *Summer*.—A partial moult involving body-feathers only (not wing-feathers, wing-coverts or tail-feathers) takes place Jan.—Mar., and occasionally finishing as late as April and May. As winter but whole head all round brown shading to blackish on posterior edge, narrow white line round posterior edge of orbit ; back of neck pure white not ash-grey as winter. N.B.—Individuals are often suffused with pink more often in summer than in winter and more conspicuously on under-parts than upper-parts ; this pink tinge fades to a great extent in dried skins but is sometimes quite strong in skins even 30 years old.

Nestling (Plate 11).—Closely covered with longish soft down with fine silky tips. Upper-parts rather dark buff heavily marked with blotches and patches (varying in size) of brown-black, those on crown forming an irregular surrounding line interrupted on nape, with spots in centre and a patch on fore-head, several irregular patches on sides of head and a pair on each side of throat, on back of neck and down centre of mantle and back forming irregular double lines with broad diagonal blotches round sides of upper-parts and on wings ; under-parts buff, pale in centre of breast, somewhat rufous at base of throat but most of rest of under-parts with dark brown bases of down not completely concealed.

Juvenile.—Fore-head and extending slightly over eyes pale brown to buffish-white ; narrow ring round eye, patch behind eye and back of neck white ; lores and anterior part of ear-coverts pale buff to whitish ; patch in front of eye, line under eye and posterior part of ear-coverts dark brown ; crown and mantle brown, feathers narrowly edged and tipped pale buff to whitish and bases grey to whitish ; upper scapulars same but with long yellowish-buff tips, lower ones ash-grey with whitish tips ; back ash-grey, feathers very faintly tipped pale yellow-buff ; rump and upper tail-coverts white, sometimes with a few buff tips ; under-parts white, with a patch of yellow-brown on sides of upper-breast and often some flank-feathers tipped same and a wash across upper-breast ; axillaries and under wing-coverts as adult but usually some grey-black on outer under primary-coverts ; tail-feathers white with buffish-

white extreme tips and broad penultimate black-brown band, narrower on outer feathers and usually restricted to inner web or



Two outer primaries of juveniles of—1. The Common Gull (*Larus c. canus*). 2. The Mediterranean Black-headed Gull (*L. melanocephalus*). 3. The Black-headed Gull (*L. r. ridibundus*). 4. Bonaparte's Gull (*L. philadelphia*).

to a spot or even absent on outermost feathers ; primaries : 2nd (outer) black outer web, tip, inner edge of inner web and usually

a line of varying width along shaft on inner web, rest of inner web and shaft white, 3rd same but wider black border to inner edge of inner web and outer web with some white at base, 4th with longer black tip (small white spot at apex), black extending along outer edge of outer web for about half its length, basal half of outer web white, black border to inner web broader and greyer, 5th same, but with little or no white on inner web, rest same but outer webs grey (that of 6th whitish-grey) and inner webs, proximal to black tips, grey-black; secondaries grey-black with grey bases, edges and tips, inner feathers with grey-black restricted to median patch near tip, innermost dark brown tipped pale buff as scapulars; primary-coverts white with varying amount of black along shaft, inner feathers with grey outer webs, black-brown inner webs and buffish tips; greater coverts grey, tipped buff and usually with some dusky-brown shaft-streaks, innermost feathers and median and lesser coverts dark brown with grey bases and pale buff tips, but feathers along edge and bend of wing white and upper series of lesser coverts mostly blue-grey with varying amount of dark brown in centres.

First winter.—Body-plumage like adult winter but sometimes a few juvenile scapulars and a few other feathers are not moulted, tail and wing-feathers as juvenile but sometimes some lesser, median or inner greater coverts new and like adult. The juvenile body-plumage and sometimes some wing-coverts (often none) are moulted July to Dec., but not tail- and wing-feathers, nor rest of wing-coverts.

First summer.—A moult of body-feathers and some innermost wing-coverts takes place Jan. to May, but not rest of wing-coverts, nor wing-feathers, nor tail (occasionally central pair is moulted). New feathers as adult summer but head usually with varying amount of white mixed with brown, and fore-head, lores and chin sometimes mostly white; back of neck not so white as adult; wing-coverts as 1st winter but showing more grey owing to wear of tips. N.B.—Very few first summer birds available for examination.

Second winter and summer.—As adults but two birds, which had been “ringed,” had in 2nd winter fine black shaft-streaks to outer primary-coverts and probably other similar birds are in 2nd winter or summer.

Measurements and structure.—♂ wing 295–315 (one 320) mm., tail 110–125, tarsus 43–49, bill from feathers 31–36 (14 British measured). ♀ wing 285–302, bill 29–33. Primaries: 1st narrow, pointed and about two-thirds primary-coverts, 2nd longest, 3rd as long or 2–5 mm. shorter, 4th 13–23 shorter, 5th 34–47 shorter. Rest of structure as Bonaparte’s Gull.

Soft parts.—(Ad.) bill, legs, and feet and edges of eyelid crimson; (juv. and 1st winter) bill dull orange to dull flesh, tip blackish, legs and feet yellow-flesh, webs and joints dusky; iris brown.

CHARACTERS AND ALLIED FORMS.—*L. r. sibiricus* (Kamtschatka)

has usually longer bill (♂ 36-40, ♀ 31-38), but is otherwise as *L. r. ridibundus* and not very well defined. Dark brown head of adult summer, slender bill, black on inner edge of primaries and white coverts along edge and bend of wing distinguish Black-headed from other British Gulls.

FIELD-CHARACTERS.—Carmine bill and feet (yellowish-red in immature bird), and, in breeding-season deep chocolate-brown hood distinguish it from all commoner Gulls. Smaller than Common Gull or Kittiwake, of more slender build and buoyant Tern-like flight. Juvenile, unlike Common Gull, is white below and has patch of dark grey on ear-coverts as has adult in winter. At all ages broad white margin to front edge of narrow, black-tipped wing is diagnostic in flight. More frequent inland than any other Gull, not only in nesting season but throughout year. Cry a querulous scream "kree-ah." In the babel at nesting places most prominent sound is a sharp "kik, kik, kik" followed by loud hoarse "quarr" as bird dashes at the intruder and then swerves upwards.

BREEDING-HABITS.—Breeds in colonies, often of vast extent, in very varied sites: among sandhills by the sea, on islands in lochs and meres, in shallow water among growing vegetation, on shingle and low sandbanks frequently near sea, but also at times far inland. Exceptionally has nested on sheds and other buildings and on low trees. *Nest*.—Carelessly built of any available vegetable matter at hand, size varying accordingly. *Eggs*.—Normally 3, but 2 not uncommon and 4 occasional. Ground-colour normally from light buffish-stone to deep umber-brown, spotted and blotched with dark blackish-brown and purplish shellmarks, but in large colonies, and especially where eggs are freely taken, eggs with blue ground, with or without markings, also occur, and a red type has been rarely recorded. Average of 100 British eggs, 51.94×37.19 . Max.: 58×36.2 and 53.8×39.3 . Min.: 46×38.3 and 49.7×34.4 mm. *Breeding-season*.—From last week April onward. *Incubation*.—By both sexes. Period apparently variable; usually 23-24 days, but by some observers stated to be 20 days (Gladstone) and 17-18 (Bahr), but last seems much too low an estimate. Single brooded.

FOOD.—Largely worms and insects, especially in breeding-season, but at Drigg young are fed chiefly on fish (sand-eels). Insects taken include coleoptera (*Aphodius*, *Geotrupes*, *Philonthus*, *Loricera*, *Agriotes* (larvæ) and *Melolontha*), diptera (especially *Tipula* and larvæ), hymenoptera (black ants), lepidoptera (ghost moth and larvæ of many species), odonata and neuroptera (*Ephemera*, etc.). Also mollusca (slugs and snails), annelida (*Lumbrici*), crustacea (Amphipoda, *Crangon*, etc.); millipedes, centipedes, occasionally even small birds (*Anthus*, *Phylloscopus*), mice (*Mus*), and eggs of its own and other species. Vegetable matter has also been recorded; cereals not uncommonly, also seeds of various plants and vegetables (potato, turnip, etc.).

DISTRIBUTION.—*British Isles.*—Resident. Has increased greatly of late years. Breeding colonies throughout Great Britain from Dorset in south-west and Kent in south-east to Shetlands and O. Hebrides and many Ireland. In winter generally distributed coasts and rivers and frequently inland. Some evidence of immigration from Continent in autumn, birds ringed in Austria, Germany, Baltic, Denmark, and Holland having been recovered (chiefly) in eastern counties, but also in Hants., Cornwall, Devon, Gloucester, Monmouth, Cheshire, and Lancs. Some emigrate, birds ringed in Great Britain having been found in Ireland, Holland, western France, Portugal, and one even in the Azores.

DISTRIBUTION.—*Abroad.*—Breeds in temperate Europe and Asia, from Færoes, south Norway, Sweden and Archangel southwards to Mediterranean, and eastwards to Kamtschatka. In winter in north Africa, casual Madeira, Canaries, Azores, and south Asia as far south as India, China, Japan, and Philippines. Once observed Greenland. Casual Iceland. Represented in easternmost Siberia (Kamtschatka, Ussuri (? nesting), China, and Japan in winter) by an insufficiently known subspecies, *L. r. sibiricus*.

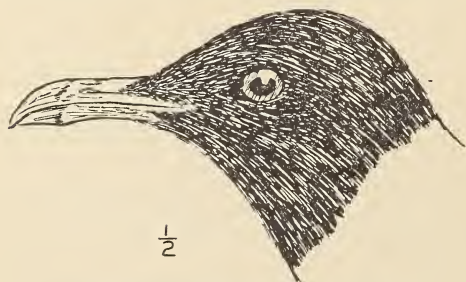
LARUS MELANOCEPHALUS

449. *Larus melanocephalus* Temm.—THE MEDITERRANEAN BLACK-HEADED GULL.

LARUS MELANOCEPHALUS Natterer, Isis 1818, p. 816 (Chiozza—*Nomen nudum*); Temminck, Man. d'Orn., 2nd ed., II, p. 777 (1820—Adriatic. First description).

Larus melanocephalus Natterer, Yarrell, III, p. 604; Saunders, p. 667.

DESCRIPTION.—*Adult male and female.* *Winter.*—Head white slightly tinged pale ash-grey, narrowly streaked dark brown especially on back of crown, nape, under eyes and ear-coverts, in front of eye blackish patch, streaks on lores very short and fore-



The Mediterranean Black-headed Gull (*Larus melanocephalus*). Adult, summer.

part of lores, fore-head and fore-part of crown often without streaks; hind-neck white tinged pale ash-grey; mantle, scapulars, and back ashy blue-grey; lower-rump, upper tail-coverts, tail and whole under-parts white; primaries pale ash-grey (almost white) tips and shafts white, outer web of outer (2nd) with varying amount

of black not extending to tip nor quite to shaft and occasionally restricted to merely a brown tinge; secondaries with pale ash-grey outer webs (extending on to inner webs in outer feathers) and white

tips and inner webs; primary-coverts pale ash-grey; coverts along edge of wing white; all other wing-coverts ashy blue-grey as mantle. This plumage is acquired by complete moult in early autumn (Aug.-Sept.). *Summer*.—The body-plumage is moulted Feb. to April but not tail, wings, or wing-coverts. Like winter but whole head all round jet-black with short line of white feathers above and below posterior half of eye but not meeting at back of eye.

Nestling.—Down like that of Sandwich, Roseate, and Sooty Terns of matted appearance, a number of filaments being enclosed in single sheath at tip, unlike any other Gulls examined. Upper-parts freckled brown, buff and grey (very much like Sooty Tern) with ill-defined parallel lines of dark brown and grey down mantle; under-parts same, but chin and centre of breast and belly whiter. (Only one specimen examined, viz. Knasib, Black Sea, H. Saunders Coll. in Brit. Mus.)

Juvenile.—(Not examined, but see 1st winter.)

First winter.—Juvenile body-feathers are moulted early autumn but not wing or tail-feathers nor wing-coverts while varying number of body-feathers, especially scapulars, are retained. Head as adult winter; hind-neck ash-grey almost as mantle; feathers of back ash-grey tipped brown; upper tail-coverts white, sometimes with brown penultimate spots; varying number of juvenile feathers (brown edged white) are retained on upper-parts, especially scapulars; under-parts white but under wing-coverts along edge of wing and covering primaries with long brown tips and rest with faint brown edgings; tail-feathers white with subterminal black-brown band, wide on central and becoming reduced on outer feathers; primaries black-brown, shafts dark-brown, 2nd (outer) with base of inner web white sometimes extended on inner edge towards tip as white mottling, 3rd and 4th same but white extending towards tip in long, narrow, blunt wedge, 5th and 6th same but wedge wider and brown margin on inner edge short, 7th with tip and outer web brown, extending somewhat on to inner web which is otherwise pale ash-grey, a pale ash-grey oval subterminal mark (varying) on outer web, extreme tip white, rest of primaries pale ash-grey with narrow brown shaft-streak extending to wide mark subterminally; secondaries white tinged ash-grey with broad subterminal black-brown band not reaching right across inner webs; primary-coverts and feathers along edge of wing black-brown, tipped white; greater coverts dull ash-grey tinged brownish and tipped white; rest of wing-coverts and innermost feathers of secondaries and greater coverts brown, edged and tipped white and with dull ash-grey bases. *First summer*.—Like first winter but head and especially nape and round eyes darker owing to wear of white edges of feathers and a sprinkling of new black feathers on fore-head and crown; hind-neck whiter, mantle more uniform, most juvenile feathers being replaced. N.B.—Only one first summer bird examined.

Second winter and summer.—As adult but outer five primaries (i.e. 2nd to 6th) with varying amount of black, outer webs of 2nd to 4th usually with distal half black extending somewhat on to inner webs along shafts, and tips black with apex white, 5th and 6th with subterminal black band across both webs, otherwise white but sometimes black descends towards base along shaft ; outer primary-coverts often tinged brown along shafts.

Measurements and structure.—♂ wing 295–315 mm., tail 117–126, tarsus 48–55, bill from feathers 33–37 (9 measured). ♀ wing 290–315, bill 30–36. Primaries : 1st very small, narrow and about three-fourths primary-coverts, 2nd longest, 3rd as long or 4–5 mm. shorter, 4th 14–20 shorter, 5th 30–40 shorter. Rest of structure as Bonaparte's Gull, but bill stout, upper mandible considerably dilated laterally except at tip which is much compressed and strong and sharply decurved, gonys comparatively short and angle fairly prominent.

Soft parts.—(Ad. summer) bill, legs and feet, and orbital ring dark red, bill with slight dusky subterminal band ; iris brown.

CHARACTERS.—No subspecies. Distinguished from *L. ridibundus* by stout bill, in adult by white primaries, in young by outer primaries having dark brown shafts and broad blackish band on inner webs adjoining shafts and extending to tips and by brown (instead of white) coverts along front edge of wing. Differing from *L. ichthyaëtus* in its much smaller size.

BREEDING-HABITS.—Breeds on low-lying islets in salt-lagoons and shallow lakes. *Nest.*—Slight, built of stalks, coarse grass, and some feathers in lining. *Eggs.*—Usually 3, sometimes only 2 ; light stone or yellowish-white in ground, with numerous small spots and streaks of dark brown and also many small ashy-grey markings. Average of 100 eggs, 53.73×38.11 . Max. : 61.9×38.3 and 53.2×42 . Min. : 47.8×37.2 and 52.8×34.9 mm. *Breeding-season.*—About last fortnight of May and early June. *Incubation.*—No details. Single brooded.

FOOD.—Probably very varied but records scanty. Insects, chiefly coleoptera (especially water-beetles) are largely taken ; also mollusca (*Helix pisana*, etc.).

DISTRIBUTION.—*England.*—Nine or more. Immature, Barking Creek (Essex), Jan. 1866. Adult, Breydon (Norfolk), Dec. 26, 1886 (Saunders, p. 667). One Yorks. coast Nov., 1895 (*Birds Yorks.*, p. 675). One Littlestone (Kent), Sept. 8, 1913 (*Brit. B.*, VIII, p. 13). Several Rye (Sussex) July, 1915, one shot 15th, two 16th, and one 21st (T. Parkin, *t.c.*, IX, p. 69), one reported seen Hastings (Sussex) Nov. 11, 1915 (*id.*, *t.c.*, IX, p. 214). [Two said Falmouth (Cornwall) Mar., 1851, *cf. Brit. B.*, II, p. 328.]

DISTRIBUTION.—*Abroad.*—Inhabits Mediterranean (breeding only certain in eastern parts), Bosphorus, and Black Sea, and reaches in

west to Spain, Portugal, and south-west France, occasionally as far as mouth of Somme in Channel, casual also Lake of Constance, Rhine, Bosnia, Heregovina. Brehm's statement of occurrence in Nubia cannot be credited.

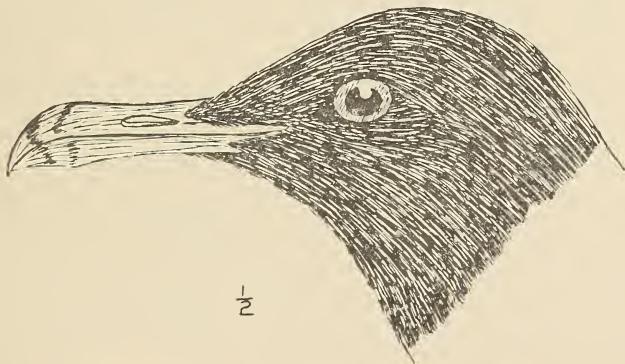
LARUS ICHTHYAËTUS

450. *Larus ichthyaëtus* Pall.—THE GREAT BLACK-HEADED GULL.

LARUS ICHTHYAËTUS Pallas, Reise d. versch. Prov. d. Russ. Reichs, II, p. 713 (1773—Caspian).

Larus ichthyaëtus Pallas, Yarrell, III, p. 609; *L. ichthyaëtus* Pallas, Saunders, p. 669.

DESCRIPTION.—*Adult male and female. Winter.*—Crown and nape black-brown, feathers fringed and tipped varying amount of white, fore-head and lores usually appearing almost uniform white, back of crown and nape mottled white and black-brown, patch in front of eye and wide stripe behind eye black-brown, immediately above and under eye a short white line; back of neck extending on to upper-mantle, rump, upper tail-coverts, tail, chin, throat, sides of neck and whole under-parts white; mantle, back, scapulars and wing-coverts slate-grey, lower scapulars tipped white; primaries



The Great Black-headed Gull (*Larus ichthyaëtus*). Adult, summer.

white, outer (2nd) with most of outer web black except at base and tip which are white, and with band of black of varying width and shape on inner web 50–60 mm. above white tip (occasionally in female and rarely in male there is a very narrow broken black bar near tip), 3rd white with narrow black bar or patch (varying greatly and sometimes absent) just above tip and above it a much wider, but also varying and very irregular, black band or patch (sometimes mostly absent from inner web), 4th and 5th white with broad black band above tip extending further on outer web and on extreme edge of inner web, 6th with considerably narrower black band and with

inner portion of inner web grey, 7th as 6th but with still narrower band (frequently absent from outer web), rest of primaries grey with white tips and white shafts ; outer and innermost secondaries grey tipped white, but middle ones entirely white ; outer primary-coverts and coverts along edge of wing white, inner primary-coverts grey as rest of wing-coverts but narrowly fringed white. This plumage is acquired by complete moult late summer to Dec. *Summer*.—Body-feathers and varying number of inner wing-coverts and one or two innermost secondaries are moulted Dec. to Mar. Like winter but whole head all round jet-black, short white stripe immediately above and below eye.

Nestling.—Closely covered with not very long down with hair-like tips. Upper-parts greyish-white slightly tinged buffish, almost uniform but nape, mantle, back and wings faintly and finely speckled pale brown, under-parts white slightly tinged buffish on throat.

Juvenile.—Whole upper-parts dark brown (paler on crown), feathers tipped greyish-white and with basal concealed portions mostly slate-grey ; rump and upper tail-coverts white sparsely spotted dark brown ; round eye and stripe behind eye black-brown, short white streak immediately above and below eye ; lores and sides of head paler brown, feathers tipped grey-white ; centre of throat white with a few brown spots, sides of throat more spotted and feathers of lower-throat and upper-breast with broad brown penultimate bands or spots forming a collar ; rest of under-parts white but lower under tail-coverts with a few large black-brown spots ; axillaries and under wing-coverts white tipped dark brown, forming a brown band along edge of wing ; tail with slightly more than basal half white, rest black-brown, narrowly tipped white, outer feather with less black ; primaries black-brown, paler on inner webs which are dull white basally this extending in varying amount in wedge-shape towards tip in 3rd to 7th, rest of inner primaries with small white tips, white of inner webs extending nearly to tip and outer webs with whitish-grey edging (varying in size) anterior to tip ; secondaries black-brown margined and tipped white ; primary-coverts black-brown, innermost tipped white ; greater coverts brown broadly margined dull slate-grey ; innermost secondaries and greater coverts as scapulars ; median coverts brown margined and tipped grey-white ; lesser coverts brown, narrowly fringed grey-white. N.B.—Only examples examined were considerably worn and commencing moult to first winter.

First winter.—Like juvenile but head, throat, breast, rump and upper tail-coverts white with no brown except round eye and stripe behind eye ; mantle and scapulars more or less slate-grey, feathers usually with brown-black centres ; old plumage much abraded and faded. The juvenile body-plumage is partially moulted Oct.-Dec., but many feathers are retained and tail and wings are not moulted. *Summer*.—Another partial moult involving body, varying number of wing-coverts and some innermost second-

aries takes place Dec.—April. Mantle and scapulars become more slate-grey and new slate-grey feathers are scattered among old worn wing-coverts and usually innermost secondaries.

Second winter.—Head mostly white but round and behind eye and back of crown streaked black-brown; back of neck pale ash-grey to whitish with varying number of dark brown or brown tipped feathers; mantle, scapulars and back slate-grey rather duller than in adult and some feathers (varying in number) with dark brown tips or spots; rump, upper tail-coverts and under-parts pure white but some under wing-coverts especially along edge of wing tipped black-brown; tail white with broad subterminal black band, reduced (sometimes to a spot) on outer feathers; primaries like juvenile but blacker and outer webs at base more or less edged whitish-grey, 2nd (outer) with white subterminal spot (varying but usually large) on inner web and sometimes small spot on outer, 3rd with or without white spot on inner web, 7th and 8th pale slate-grey with varying amount of black at tip and down centre and small white apex, 9th to 11th slate-grey tipped white; secondaries slate-grey tipped white with varying black-brown median streaks; primary-coverts black tipped white; wing-coverts slate-grey but those along edge of wing and most lesser coverts tipped brown and sometimes others with brown median streaks. This plumage is acquired by complete moult as in adult. *Summer.*—After partial moult as in adult head becomes all round mostly black with some white feathers interspersed, back of neck white and rest of upper-parts much as adult but wings and tail as 2nd winter.

Third winter and summer.—Like adult but with varying number of subterminal black spots or marks on tail; primaries with more black than in adult, 2nd always with subterminal black bar, 3rd with white at tip confined to spot on inner web, 8th frequently with some black subterminally.

Measurements and structure.—♂ wing 475–510 mm. (juv. 470–480), tail 170–190, tarsus 75–84, bill from feathers 60–69 (juv. 55–67) (12 measured). ♀ wing 435–480 (juv. 430–470), bill 49–61 (juv. 48–60). Primaries: 1st very small and narrow, 2nd longest, 3rd as long or 2–7 mm. shorter, 4th 15–30 shorter, 5th 40–55 shorter. Rest of structure, including shape of bill, as in *Larus melanocephalus*.

Soft parts.—Bill (ad.) orange-yellow, terminal portion orange-red and broad black subterminal band on both mandibles, (juv. and 1st winter) basal portion grey to pale brownish, subterminal horn-black, tip paler, (2nd winter) apparently like adult; legs and feet (ad.) greenish-yellow, (juv. and 1st winter) lead-grey to grey-brown; iris brown; orbital ring deep red.

CHARACTERS.—No subspecies. Distinguished from other British Gulls by its large size and shape of bill, besides black on head and in juvenile white-margined black secondaries.

BREEDING-HABITS.—Nests in colonies on low lying sandy spits in salt seas, but also on islands overgrown with high reeds in the great

rivers of South Russia. *Eggs*.—2 or 3, yellowish-stone in ground-colour, boldly streaked and scrawled with dark umber-brown as a rule, but sometimes spotted and blotched. Average size of 55 eggs, 77.84×53.64 . Max.: 84.5×55.7 and 76.2×57.1 . Min.: 68×50.2 mm. *Breeding-season*.—Latter half May to early June. *Incubation*.—No details, but probably single brooded.

Food.—Mainly fish, but said also to take reptiles, crustacea, and orthoptera (locusts).

DISTRIBUTION.—*England*.—Two. Adult off Exmouth (Devon), end May or early June, 1859 (F. W. L. Ross, *Ann. & Mag. N.H.* (3), IV, p. 467). Male adult Jury's Gap (Kent) shot June 25, 1915, and stated to have been seen between Rye and Lydd during May (H. W. Ford-Lindsay, *Brit. B.*, IX, p. 69).

DISTRIBUTION.—*Abroad*.—Breeds easternmost Mediterranean (not Greece) north to Crimea and Sarpa steppe (Volga), east to Caspian and Aral, Suliuk-Kul and Chalkartenis, Irgis and Turgai. Observed (*teste* Buturlin) elsewhere in Russia, north to Pskov and Kazan, in Asia to Irtysh R. Not rarely observed in Egypt to Nubia and Red Sea, on coasts of Persian Gulf and Baluchistan, in India as far as Ceylon, casual Tenasserim, Burmah. Three records for Italy, including Sicily. Statements of occurrence in Switzerland and in Heligoland doubtful.

LARUS CANUS

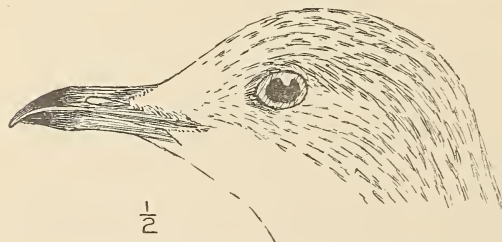
451. *Larus canus canus* L.—THE COMMON GULL.

LARUS CANUS Linnæus, *Syst. Nat.*, ed. x, i, p. 136 (1758—Europe. Restricted typical locality: Sweden).

Larus Hybernus Tunstall, *Orn. Brit.*, p. 3 (1771—Name for Pennant's Winter Mew, from England).

Larus canus Linnæus, Yarrell, III, p. 613; Saunders, p. 671.

DESCRIPTION.—*Adult male and female*. *Winter*.—Whole head white with thick dark grey streaks on crown and nape, scarcely any on fore-head and lores, fine ones under eyes and on ear-coverts, more



The Common Gull (*Larus c. canus*). Adult, winter.

spot-shaped ones on sides of neck and towards centre of lower throat but none on rest of throat or chin; back of neck (below nape) and upper-mantle ashy-white unspotted; rest of mantle, back and scapulars blue-grey, tips of longer scapu-

lars white; sides of rump and lower-rump, upper tail-coverts and tail and under-parts including axillaries and under wing-coverts white,

but under primary-coverts tinged grey ; primaries : 2nd (outer) black (base grey-black) with long (40-50 mm.), roughly oval, subterminal white "mirror," extreme tip with small white spot (very rarely white "mirror" extended to tip), 3rd same but base grey, subterminal white "mirror" smaller and its shaft usually brown, slightly larger spot of white at extreme tip, 4th with more grey at base, no white "mirror" (very rarely a small "mirror" or a white subterminal spot on inner web), white tip larger, 5th with about basal three-fourths grey (shaft grey-brown), grey extending further towards tip on inner web and shading to whitish near black tip, extreme tip white, 6th same but black tip much restricted, 7th grey, tip white with a subterminal narrow black band varying in width, often broken, sometimes absent on outer and occasionally on both webs, rest of primaries grey shading to white at tips but 8th occasionally with a subterminal brown-black mark ; secondaries blue-grey with long white tips ; all wing-coverts blue-grey but feathers along edge and bend of wing white. This plumage is acquired by complete moult (commencing with inner primaries) June to Oct. *Summer*.—The body-feathers but not wing- or tail-feathers nor wing-coverts are moulted March to May. Plumage as winter but whole head, neck and upper-mantle uniform white. N.B.—Frequently there is a salmon-pink tinge on under-parts both in winter and summer but this disappears in dried skins.

Nestling.—Closely covered with longish, soft down with fine silky tips. Upper-parts pale buff to buffish-grey marked with spots and blotches of black-brown much as in *L. r. ridibundus* but dark markings browner, less prominent, narrower, smaller and more broken, forming no regular pattern ; under-parts buff, yellowish or sometimes whitish in centre of breast but on throat, sides and vent darker with dark brown base of down not completely concealed.

Juvenile.—Fore-head, lores, under eyes, ear-coverts, crown and nape pale grey-brown streaked white, feathers having white edges ; back of neck more uniform grey-brown, feathers narrowly fringed grey-white (buffish when very young) and white bases not completely concealed ; mantle and scapulars brown, feathers margined buffish-white (buff when very young), long scapulars buffish-grey with brown subterminal centres ; back dull grey, feathers tipped buffish and with subterminal brown mark of varying strength ; rump and upper tail-coverts white tinged buff with pale brown spots or marks of varying size ; chin, upper-throat, centre of breast and belly uniform white ; lower-throat, breast, sides, flanks, axillaries and under tail-coverts spotted and mottled with brown ; under wing-coverts brown with varying amount of whitish base of feathers showing ; tail white with a broad black-brown subterminal band, reduced on outer feathers and sometimes restricted to median streak on outermost, proximal to band feathers freckled brown, tips white ; primaries : outer ones black-brown, paler on inner webs and becoming dull grey on inner

webs of 5th and 6th, while 7th to 11th are mostly dull grey with shafts, subterminal marks and edges of outer webs brown; secondaries dull grey with whitish tips and bases and brown subterminal marks which (except in outer feathers) extend towards base on outer webs, innermost feathers brown tipped dull white; primary-coverts dark brown; coverts along edge of wing brown with white bases not entirely concealed; greater coverts buffish-grey, tipped buff, outer webs especially of outer feathers usually grey-brown, innermost feathers as rest of coverts brown edged buff.

First winter.—Varying number of the juvenile body-feathers are moulted Aug. to Oct., but always some and usually many are retained while wing- and tail-feathers and wing-coverts are not moulted. New feathers like adult winter but lower part of back of neck streaked as crown and always some and usually many retained juvenile feathers on upper- and under-parts; wings and tail as juvenile. *First summer.*—Much as first winter but a few more body-feathers are moulted April-May and mantle is usually purer grey and under-parts purer white but crown streaked and still a good many juvenile body-feathers retained as also all wing- and tail-feathers and wing-coverts.

Second winter and summer.—Moult as adult but distinguished by varying but considerable amount of black-brown on primary-coverts, along edge of wing and usually some spots at bend of wing, some brown edgings or tips to median and lesser coverts (especially latter), usually some brown edgings to under wing-coverts, sometimes some on flanks, occasionally some black marks on tail-feathers but usually these are pure white, primaries browner, not so black as in adult, with much smaller white tips, smaller mirror on 3rd, more black at tip of 7th and usually some black on 8th, secondaries usually as adult but occasionally with dark brown subterminal marks.

Third winter and summer.—Probably usually indistinguishable from adults but birds with fine brown-black shaft-streaks on primary-coverts but otherwise like adults may be in third winter.

Measurements and structure.—♂ wing 340–371 mm., tail 133–147, tarsus 48–55, bill from feathers 32–36 (12 European measured). ♀ wing 330–365, bill 29–33. Primaries: 1st narrow, pointed and about two-thirds primary-coverts, 2nd longest, 3rd 1–5 mm. shorter, 4th 18–25 shorter, 5th 45–53 shorter. Rest of structure as Bonaparte's Gull but bill stouter and more sharply decurved at tip.

Soft parts.—Bill (ad.) yellow-green, upper mandible and tip purer yellow, (juv. and 1st winter) blackish with dull flesh base, (2nd winter) pale slate with subterminal dusky band and yellowish tip; gape and inside mouth (ad.) orange-red; legs and feet (ad.) green-yellow, marked blue-grey, (juv.) yellow-flesh, (2nd winter) pale slate, webs tinged yellow; iris brown to whitish or yellowish-white; eyelids and orbital ring (ad.) vermilion, (juv. and 1st winter) dusky-brown, (2nd winter) tinged orange.

CHARACTERS AND ALLIED FORMS.—*L. c. major* (Siberia) is larger with higher and thicker bill; *L. c. brachyrhynchus* (western N. America) has grey on primaries extended further towards tips and usually patch of white immediately proximal to black tip. Size and in adult greenish-yellow bill and grey and black primaries (outer with white "mirrors") and in young mottled crown, dark primaries without white and dark edge of wing and mottled under-wing distinguish species.

FIELD-CHARACTERS.—Rather larger and of more robust build than Black-headed, but decidedly smaller than Herring-Gull. Adult has greenish feet and bill, latter lacking Herring-Gull's red spot on gonys. Mantle paler grey than in Kittiwake. Large white subterminal wing-tip, smaller in Herring-Gull and lacking in Kittiwake, is a marked character in flight. Ash-brown plumage of juvenile not unlike that of Herring and Lesser Black-backed Gulls, but bird is more bullet-headed and much smaller. More of an inland feeder—particularly on pastures—than the larger Gulls. Its varied vocabulary includes a wailing "kee-yah" similar to that of other Gulls. Alarm-note a clamorous "yak, yak, yak."

BREEDING-HABITS.—Frequently breeds on low islets in lochs, but also on grassy hills and on boggy moorlands or hillsides near sea, usually in small or medium-sized colonies. *Nest*.—Variable in size, built of heather, grass or sea-weed as obtainable. *Eggs*.—Usually 3 but sometimes 2 only (exceptionally 4) varying from dark to light olive in ground (occasionally pale greenish or bluish) with blotches, spots and a few streaks of dark umber-brown. Average of 100 eggs, 58.41×41.34 . Max. : 64.8×41.3 and 64.4×45 . Min. : 53.3×41 and 56.4×36 mm. *Breeding-season*.—Latter half May and early June as a rule in British Isles, but occasionally early May. *Incubation*.—Share of sexes and periods seem not to be definitely known. Single brooded.

FOOD.—Almost omnivorous: carrion, small mammals (young voles, etc.), small birds (such as Meadow-Pipit), and eggs of many species (Red-throated Diver, Lapwing, Oyster-Catcher, Dunlin, Ringed Plover, and Terns), fish, mollusca (slugs, *Cardium edule*, etc.), worms (*Lumbrici*, etc.), insects (coleoptera, diptera, orthoptera, larvæ of lepidoptera, and hymenoptera), spiders, crustacea, millipedes, and harvesters. Also vegetable matter: potatoes, turnips, grass, seeds, and grain, fragments of sea-weed and moss.

DISTRIBUTION.—*England and Wales*.—On all coasts and often inland. Young birds frequent all summer, especially in north. One pair has bred Farne Isles (Northumberland), since 1910, and possibly once previously, one pair bred English side of Solway, 1914, and 3 or 4 pairs on Dungeness beach (Kent), 1919, and since, but has not bred elsewhere. Some winter-visitors are immigrants from Continent, birds ringed in Baltic and Denmark having been recovered in Norfolk, Hants., and Gloucester. *Scotland and Ireland*.—

Resident. In Scotland breeds from Solway and north of Forth northwards on low coasts and freshwater lochs on mainland and islands. In Ireland small colonies in coast districts, Donegal, Sligo, Mayo, and Connemara, Loughs Conn and Mask, and Blaskets (Kerry). Common and more widely distributed winter.

DISTRIBUTION.—*Abroad*.—Breeds in Northern Europe and Asia, north to 67°–70°, south to Frisian Isles, Jutland, Mecklenburg, Russian Baltic Provinces, and even south Russia. In autumn and winter to Mediterranean basin and Canaries (casual), Nile Valley, and Persian Gulf; rare in Iceland, once in Labrador. Replaced by *L. c. brachyrhynchus* in western N. America, by *L. c. major* in Siberia.*

LARUS ARGENTATUS

452. *Larus argentatus argentatus* Pontopp.—THE HERRING-GULL.

LARUS ARGENTATUS Pontoppidan, Danske Atlas, I, p. 622 (1763—Denmark).†

Larus argentatus Gmelin, Yarrell, III, p. 618; Saunders, p. 673.

DESCRIPTION.—*Adult male and female*. *Winter*.—Whole head and hind-neck white streaked brown, streaks on hind-neck wider and sparser than on crown and sometimes absent, those on throat sparser and sometimes absent but sometimes extending on to upper-breast; mantle, back, and scapulars pale blue-grey, lower scapulars tipped white; rump, upper tail-coverts and rest of under-parts including under wing-coverts white; tail white; primaries: 1st (undeveloped) blue-grey with white outer web, 2nd (outer) brown-black with base of inner web ashy blue-grey extending in varying degree along inner edge towards tip, tip (40–60 mm.) white, with subterminal black band of varying width, often incomplete and restricted to spots of varying size on both or only one web and sometimes with no black, 3rd brown-black with grey at base of both webs and extending on inner web further towards tip than in 2nd, extreme tip white, a subterminal white oval (“mirror”) varying in size, sometimes across both webs, more usually confined to inner web, sometimes restricted to small spot and occasionally absent, 4th as 3rd but blue-grey extending further towards tip and no “mirror,” 5th with blue-grey still more extended and becoming whitish on inner web where it joins black tips, 6th as 5th but black restricted to a subterminal band, rest blue-grey with white tips,

* Breeding specimens, which I have examined, in Mr. H. Leyborne Popham’s collection show that this form extends as far west as the Yenesei.—H.F.W.

† Pontoppidan’s diagnosis is brief, but undoubtedly acceptable for this species, while Brünnich’s better description in 1764 confirms it; Pontoppidan got most of his names from Brünnich’s MS., and for the most part described the same specimens. Pontoppidan’s name *L. varius* appears a few lines above his *argentatus*, but is based on Brisson vi, pl. 15, which represents a young gull, the description and figure of which are conflicting and the species uncertain.—E.H., H.F.W.

usually with black subterminal band or spot on 7th and occasionally a spot on 8th ; secondaries pale blue-grey, tipped white ; primary-coverts and all wing-coverts pale blue-grey but those along edge and bend of wing white. This plumage is acquired by complete moult May-Oct. *Summer*.—The body-feathers are moulted Jan.–April but not wing- or tail-feathers nor wing-coverts. As winter but whole head, hind-neck, throat and breast pure white.

Nestling (Plate 11).—Closely covered with longish, soft down with fine silky tips. Upper-parts and chin and throat buffish-grey with numerous spots and blotches of black-brown, those on crown and throat separated and those on upper-parts coalescing somewhat and forming no definite pattern, those on head forming a line of spots round eye, a streak in centre of fore-head, uneven V-shaped groups in centre of crown and nape, streaks on each side of throat and often a spot in centre of throat ; back of neck usually without spots ; lower-throat buff ; breast and belly buffish-white but down round sides of body and vent with dark brown bases.

Juvenile.—Fore-head, crown, nape and sides of head brown, narrowly streaked white, feathers being edged white ; mantle brown, feathers edged and tipped pale buff to buffish-white (becoming white when worn) and those on lower-mantle with notches or transverse bars of pale buff ; scapulars same but sides of feathers more notched or with comb-like bars of pale buff ; back, rump and upper tail-coverts buffish-white, feathers with brown bars and subterminal arrow-head marking ; centre of chin and throat white, sides streaked brown ; rest of under-parts greyish-white thickly mottled brown, feathers having white bases and grey-white fringes and pale brown spots and bars on distal halves, belly white, flanks with better defined (darker) brown bars and marks ; under tail-coverts as upper tail-coverts ; axillaries brown with narrow grey-white bars or mottlings or grey-white with brown bars ; under wing-coverts brown with grey-white mottlings or bars ; tail-feathers narrowly tipped white with broad (in central feathers 50–60 mm.) black-brown subterminal band, in central feathers proximal to subterminal band irregular broad brown and narrow white bars, feathers outwards from centre have more white, and brown bars become broken up into spots and blotches, on outermost subterminal band is much restricted and rest of feather is white with fewer large streaks or spots of brown (markings on tail-feathers vary considerably) ; outer six primaries black-brown with small white tips and pale brown inner webs becoming whitish at base, rest of primaries paler brown mottled darker brown and with rather larger white tips and dark brown subterminal patch ; secondaries with black-brown outer webs, pale brown inner webs, whitish at base and small dull white tips, inner feathers with white edges indented towards tip ; primary-coverts black-brown narrowly tipped buffish-white ; rest of wing-coverts as mantle but brown rather darker.

First winter.—Much like juvenile but crown and neck rather

paler and less heavily streaked ; mantle and scapulars paler and more buff, new feathers having distal halves creamy-buff with sub-terminal brown bar ; wings and tail as juvenile. The juvenile body-feathers are moulted Aug. to Nov., but varying number are retained (often many) and wing- and tail-feathers and wing-coverts are not moulted. N.B.—White edges of retained juvenile feathers of mantle and scapulars become much worn. *First summer*.—A partial body-moult similar to that in first autumn takes place Jan.—March. New feathers of upper-parts buff, barred brown as first winter giving a paler, more buff and less brown appearance than juvenile ; crown and neck whiter with streaks much as adult winter ; under-parts white with more or less concealed pale brown bars and marks ; wings and tail as juvenile. N.B.—As in first winter many juvenile body-feathers are retained and number of these moulted varies individually.

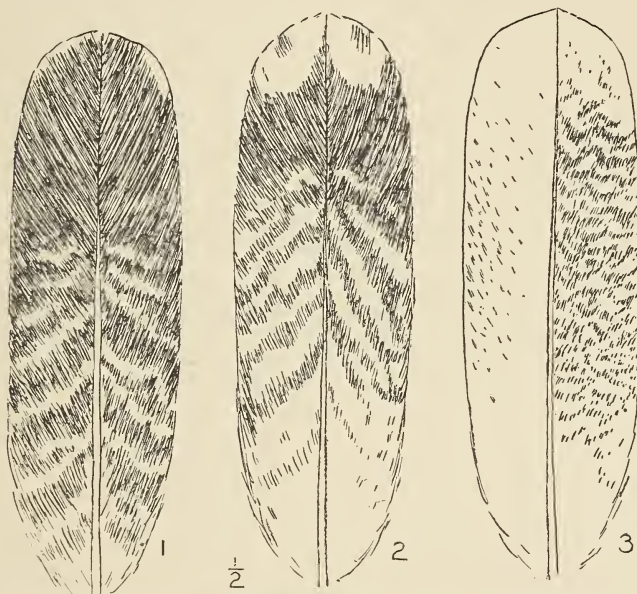
Second winter.—Crown and neck whiter and not so heavily streaked as 1st winter but streaks much broader than adult and mottled on nape ; mantle and scapulars blue-grey with varying amount of brown shaft-streaks, narrow bars or mottlings and buff tinge, lower scapulars tipped white ; back as mantle but sometimes like rump and upper tail-coverts white with varying amount of pale brown shaft-streaks and broken bars ; under-parts white lightly streaked and mottled pale brown ; tail with well-defined broad black-brown subterminal band (sometimes this is broken up even in central feathers) and distal to it narrow, close, wavy black-brown bars and streaks, outer feathers with less barring and outermost mostly white with subterminal brown central patch and a few spots or streaks but usually not complete bars (closeness of barring and streaking on tail-feathers varies) ; primaries : outer 4 or 5 dark brown, inner webs paler and ash-grey at base, 2nd sometimes with white (mottled brown) subterminal spot, 6th and 7th or 7th and 8th pale brown or brown-grey finely mottled darker, with dark brown subterminal band and white tip, rest whitish-brown to blue-grey slightly mottled darker and with dark shafts and white tips ; secondaries dull grey with varying amount of brown marking and mottling near tip especially on outer webs, tips dull white ; primary-coverts brown tipped dull white ; wing-coverts as juvenile but paler with broad buffish-white bands and varying number dull blue-grey with brown marks as mantle. This plumage is acquired by a complete moult as in adult. *Second summer*.—Body-plumage as adult summer, but some scapulars mottled pale brown and some pale brown mottlings on under-parts ; wings and tail as 2nd winter.

Third winter and summer.—Like adult but varying amount of brown mottling on tail (occasionally pure white), 2nd primary often with less white at tip than in adult and sometimes white is speckled with brown, 3rd primary often without mirror, primary-coverts usually mottled, freckled or marked with varying amount of brown but sometimes blue-grey with dark shaft-streak and occasionally

as adult, outer webs of some outer primaries and of secondaries sometimes freckled brown.

Fourth winter and summer.—Like adult.

Measurements and structure.—♂ wing 410–450 mm. (juv. 400–425), tail 160–180, tarsus 63–68, bill from feathers 48–55 (juv. 48–54) (12 British measured). ♀ wing 390–425 (juv. 375–400), bill 47–53 (juv. 44–51). Primaries: 1st narrow, pointed, and about two-thirds primary-coverts, 2nd longest, 3rd usually as long but occa-



Middle tail-feathers of Herring-gulls (*Larus a. argentatus*): 1. 1st winter. 2. 2nd winter. 3. 3rd winter.

sionally 3–5 mm. shorter, 4th 15–24 shorter, 5th 35–50 shorter. Rest of structure as Bonaparte's Gull but tarsus and bill comparatively strong and tip of upper mandible more strongly curved downwards and angle of gonys more prominent.

Soft parts.—Bill (ad.) deep yellow, angle bright vermilion, tip whitish bone-colour, gape orange-yellow, (juv. and 1st winter) brown-black, base of lower mandible pinkish-horn, (1st summer—2nd winter) base of both mandibles pale brown or pinkish, (2nd summer) some orange on angle, (3rd winter) base bone-colour tinged yellow, towards tip of upper pale yellow, angle marked with orange and black, (3rd summer) like adult but with slight subterminal dark mark; legs and feet (ad.) flesh-pink but front of tarsus and joints whitish-flesh, (juv. to 2nd winter) pale brownish-flesh; iris (ad.) very pale lemon, (juv. to 2nd winter) dark olive-brown, (3rd winter)

greyish to pale yellow, (3rd summer) as adult ; orbital ring and eyelids (ad.) orange, (juv. to 3rd winter) pink-brown.

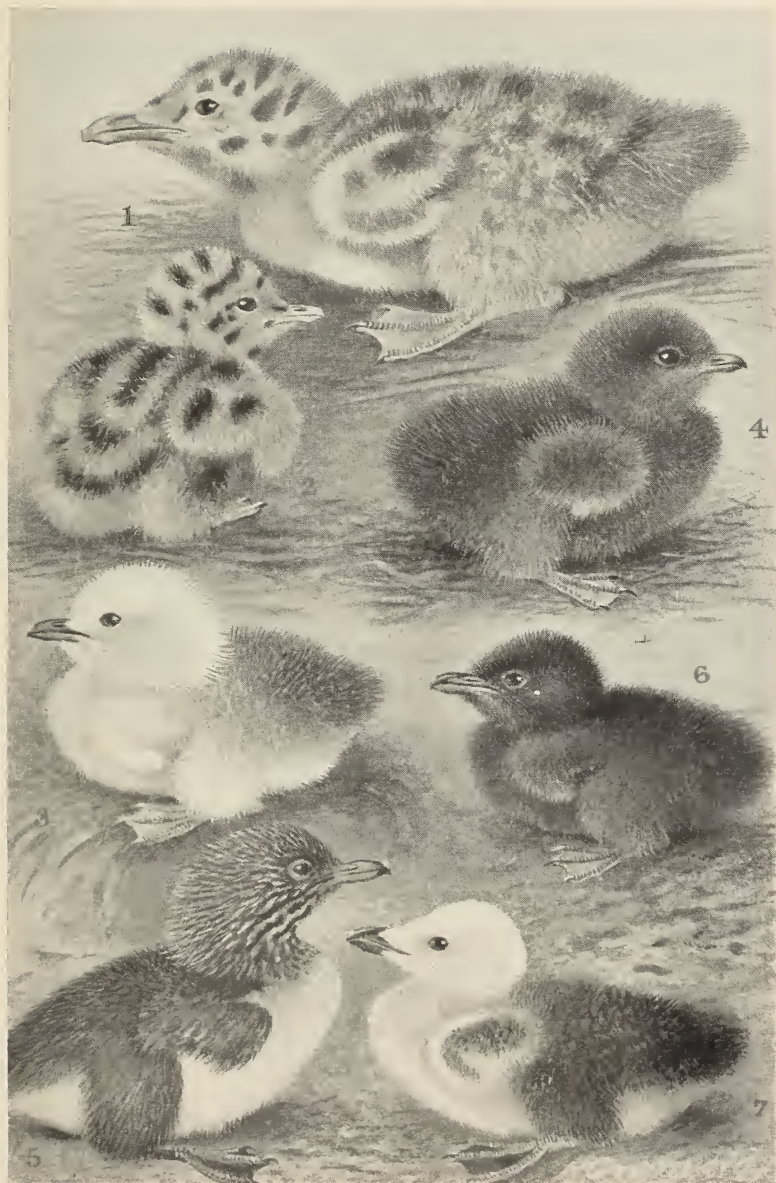
CHARACTERS AND ALLIED FORMS.—Adult *L. a. cachinnans* has yellow legs, for other differences see under that form ; *L. a. vegae* (Siberia to Commander Is.) has in adult mantle and wing-coverts usually darker as in *L. a. cachinnans* but crown in winter streaked as in *L. a. argentatus* and grey portion of primaries even darker than in *L. a. argentatus*, legs and feet pale yellowish-flesh or very pale flesh ; *L. a. atlantis** (Azores, Canaries), adult has yellow legs and mantle and wing-coverts are slightly darker than in *L. a. cachinnans* but grey portion of primaries is as dark or slightly darker than in *L. a. vegae* ; *L. a. thayeri* (Arctic America) is stated to have in adult less black at tips of primaries than *L. a. argentatus*. Distinguished from *L. fuscus* adult by pale mantle and flesh-coloured legs, for distinctions of young see under that species.

FIELD-CHARACTERS.—Adult not unlike Common Gull but considerably larger ; feet flesh coloured and bill yellow with red spot on gonys. In flight comparatively small white subterminal wing-tip is a good distinction. Juvenile resembles Lesser Black-backed but is of slightly paler colour. Commonest species on our coasts but less frequent inland than Lesser Black-backed, Common or Black-headed Gulls. Garrulous ; has wailing cries common to many Gulls. A soft “ quee-ow ” is perhaps a call, whilst at nesting-places a loud barking “ haow, haow, haow ” and “ ag, ag, ag,” seem to imply alarm or defiance.

BREEDING-HABITS.—Nests usually in colonies on grassy tops of small islands or on face of cliffs, and on Continent also among sand-dunes. *Nest*.—Large, built of any suitable material, grass, sea-weed, heather, etc. *Eggs*.—Usually 3, sometimes 2 only, rarely 4, ground-colour olive to umber-brown, occasionally pale blue, or greenish, spotted and blotched with deep blackish-brown. In Scandinavia an erythristic type occurs, which is not found in British Isles. Average of 50 British eggs, 69.79×48.34 . Max. : 83.4×47.4 and 75.8×54 . Min. : 62.3×42.7 . *Breeding-season*.—From end April to early June, but most eggs laid in May. *Incubation*.—Shared by both sexes. Period varies from 24 to 28 days. Single brooded.

FOOD.—Omnivorous in its diet : carrion (dead sheep, dogs, etc.) small mammals, such as young rabbits : migrating and wounded birds (Blackbird, Lark, Corncrake, Dunlin, etc.) : eggs of coast-breeding birds especially Cormorant, Gannet, Guillemot, and Razorbill : fish, cast up on shore : mollusca (*Macra*, *Mytilus*, *Lacuna*,

* Dr. J. J. Dwight, who described this form (Amer. Mus. Nov., No. 44, Sept. 6, 1922), places it as a subspecies of *L. fuscus*. The forms of the two species *L. argentatus* and *L. fuscus* intergrade both in colour of mantle and pattern of primaries and as we regard *cachinnans*, with its yellow legs, as a subspecies of *L. argentatus* I consider *atlantis* also as a subspecies of *L. argentatus*.—H.F.W.



(ABOUT 2-5THS NATURAL SIZE.)

NESTLINGS IN DOWN OF: 1, The Herring-Gull (*Larus a. argentatus*). 2, The Black-headed Gull (*L. r. ridibundus*). 3, The Kittiwake (*Rissa t. tridactyla*). 4, The Arctic Skua (*Stercorarius parasiticus*). 5, The Common Guillemot (*Uria t. troille*). 6, The Black Guillemot (*U. g. grylle*). 7, The Razorbill (*Alca torda*).

Purpura, *Helix*, *Littorina*, etc.), crustacea (crabs, *Portunus* and other species, *Crangon*, *Balanus*, etc.), echinodermata (*Asterius*, *Ophiothrix*, and *Echinus*), annelida (earthworms and also marine worms), insects, including diptera (*Muscidæ*, and *Tipulidæ* and their larvæ), orthoptera (*Forficula*), coleoptera and larvæ, and neuroptera. Also vegetable matter, turnips, potatoes, grass, moss and grain as well as seeds of various plants (*Spergula*, *Ranunculus*, *Polygonum*, *Stellaria*, etc.), and berries of *Empetrum* and *Rosa*.

DISTRIBUTION.—*British Isles*.—Resident. Breeds all precipitous coasts and stacks, as well as in some localities on low ground such as low islands and bogs. In winter generally distributed on coasts and often inland.

DISTRIBUTION.—*Abroad*.—Breeds in northern Europe: Scandinavia and apparently north Russia on lake of Ladoga (though Buturlin says (*teste* Dresser) that on White Sea and Gulf of Finland *L. a. cachinnans* nests), coasts of Baltic and North Sea, south to north-west France, also Greenland and northern N. America. (Not Iceland.) In winter south to Mediterranean (rare), in America to Cuba and Mexico. Replaced during breeding-season, on north Spanish and Portuguese coasts, in Mediterranean, Atlantic islands, and coasts of north-west Africa, as well as from White Sea, Black and Caspian Seas, eastwards to Lake Baikal, and along arctic coast of Siberia by allied forms. Another insufficiently known form *L. a. thayeri*, said to breed Ellesmere Land, Buchanan Bay, to Banks Island.

453. *Larus argentatus cachinnans* Pall.*—THE YELLOW-LEGGED HERRING-GULL.

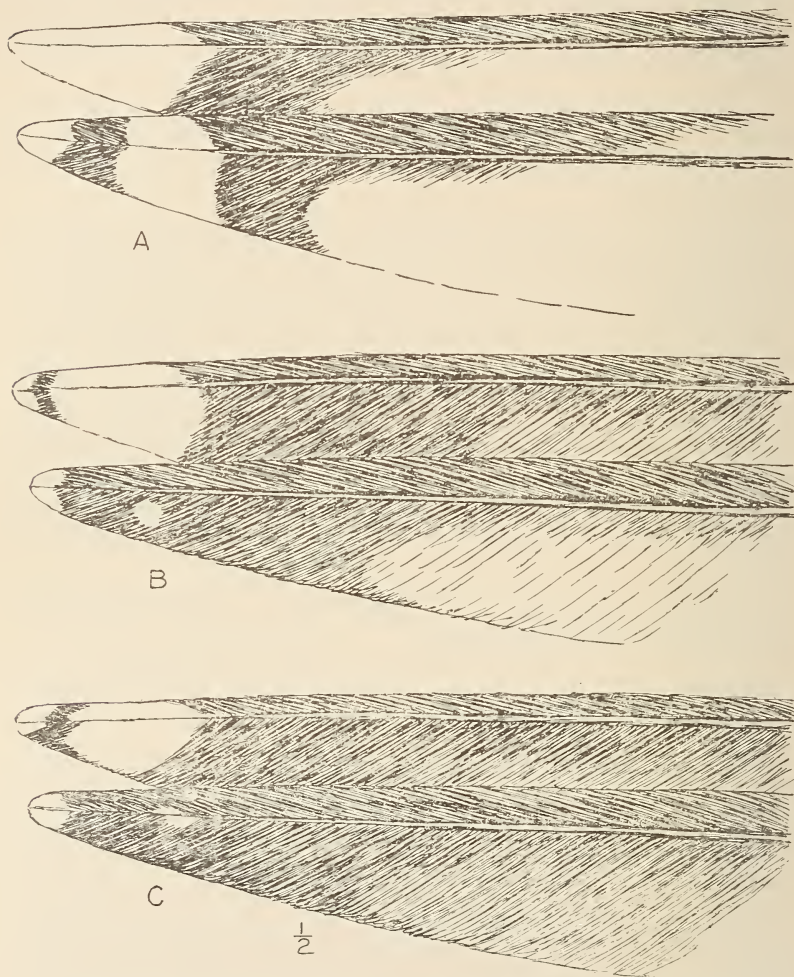
LARUS CACHINNANS Pallas, Zoogr. Rosso-Asiat., II, p. 318 (1827—Caspian Sea, Volga to Lake Baikal).

Larus cachinnans Pallas, Saunders, pp. 673, 674.

DESCRIPTION.—*Adult male and female*. *Winter*.—Like *L. a. argentatus* but crown and sides of head very seldom with any streaks at all, hind-neck not so heavily streaked, throat and upper-breast without streaks (there is considerable individual variation and most streaked *L. a. cachinnans* are like least streaked *L. a. argentatus*

* The only British specimen has been examined by Dr. J. J. Dwight and myself (by the courtesy of its owner Mr. W. R. Lysaght) and found not to belong to the Azores-Canaries form *atlantis* which Dr. Dwight has recently described as distinct. Hartert considers the Mediterranean bird (*michahellesii*) distinguishable from more eastern birds (*cachinnans*) on account of the paler and usually white or whitish patches on the inner webs of the outer primaries of the latter. This is, however, a somewhat variable character, and while the webs of the outer primaries in the British specimen (which is an adult) are not whitish they are pale ash-grey and, moreover, are not fully grown, the bird being in moult. The name *cachinnans* is, therefore, retained for the single British example which might have reached Norfolk from north Russia or Sweden with perhaps more probability than from the Mediterranean.—H.F.W.

but large majority are much less streaked) ; mantle, back, scapulars and wing-coverts as in *L. a. argentatus* but on the whole slightly darker though many individuals cannot be distinguished ; primaries as in *L. a. argentatus* but grey of inner webs usually paler and often



Two outer primaries of adults of—A. The Yellow-legged Herring-Gull (*Larus argentatus cachinnans*). B. The Herring-Gull (*L. a. argentatus*). C. The British Lesser Black-backed Gull (*L. fuscus affinis*).

extending further towards tips, on outer two primaries often white or whitish, white tip of 2nd usually longer (50–65 mm.) and sub-terminal band more often broken, 3rd seldom without mirror which is usually larger than in *L. a. argentatus*. This plumage is acquired by complete moult May–Oct. *Summer*.—The body-feathers are

moulted Dec. to March and sometimes (perhaps as a rule) inner wing-coverts and innermost secondaries are also moulted but not rest of wings nor tail. Plumage as winter but head entirely white as in summer *L. a. argentatus*.

Nestling.—Like that of *L. a. argentatus* but black-brown spots and blotches on head smaller and less numerous, dark markings on rest of upper-parts small and ill-defined and often almost obscured by buff-grey, except blotches on wings, which are usually distinct.

Juvenile.—Like that of *L. a. argentatus* but portion of tail-feathers proximal to black subterminal band usually whiter and with fewer dark markings (sometimes outer-feathers white except for subterminal band) but owing to individual variation this character is not a certain means of identification.

First winter.—Crown whiter less streaked, mantle and scapulars paler and under-parts rather whiter than in *L. a. argentatus*. *First summer*.—As above but crown usually quite white or with a few pale brown streaks, new feathers of mantle and scapulars paler and greyer. Moults as in *L. a. argentatus*.

Second winter and summer.—Like *L. a. argentatus* but proximal part of tail-feathers usually with fewer black bars and markings, crown in winter only faintly streaked and under-parts usually purer white.

Third winter and summer.—Differing from adult in same way as in *L. a. argentatus*.

Measurements and structure.—♂ wing 425–465 mm. (juv. 430–455), tail 155–180, tarsus 65–73, bill from feathers 53–65 (juv. 50–57) (12 measured). ♀ wing 420–445 (juv. 400–445), bill 50–58 (juv. 45–57). Structure as *L. a. argentatus*.

Soft parts.—As *L. a. argentatus* but in adult legs and feet pale yellow sometimes tinged flesh, in 3rd winter and summer pale salmon or pale creamy-flesh with grey tinge; younger birds as *L. a. argentatus*.

BREEDING-HABITS.—Nests in colonies, often on rocky islands, but also on flat islets, sand-banks and among reeds. Exceptionally breeds on roofs of fishers' huts. *Nest*.—Large, built of any available material, heath, algæ, grass, and shore-wrack of any kind as well as dead stalks, plants, etc. *Eggs*.—Usually 3, but sometimes 2 only, like those of Herring-Gull, but red type not recorded. Average of 100 eggs, 70.87×49.24 . Max. : 86.8×46.5 and 70.3×53.3 . Min. : 63×47.7 and 65.8×44.3 mm. *Breeding-season*.—From early April onward in Mediterranean, but eggs may be found till June as nests are often robbed. *Incubation*.—Probably resembles Herring-Gull but no reliable observations. Single brooded.

FOOD.—Little definitely recorded; but fish, stranded or captured alive, insects, including orthoptera, dead birds, and marine invertebrata from shore, have been noted, and on one occasion the writer

saw a vole, which had taken to the water, picked up and swallowed after a long struggle.

DISTRIBUTION.—*England.*—One obtained, three seen. One shot Breydon (Norfolk) Nov. 4, 1886 (T. Southwell, *Zool.*, 1897, p. 572). One seen Dover (Kent) April 18, 1904 (N. C. Rothschild, *Bull. B.O.C.*, xiv, p. 91). One seen Fair Isle (Shetlands) Sept. 28, 1921 (W. E. Clarke and J. H. Stenhouse, *Scot. Nat.*, 1921, p. 180). One seen Formby shore (Lancs.) Feb. 10, 1918 (H. W. Robinson, *Scot. Nat.*, 1922, p. 16).

DISTRIBUTION.—*Abroad.*—Breeds from Black and Caspian Seas through west Asia to Lake Baikal. According to Buturlin also in White Sea, Gulf of Finland, and Lake Onega; according to Lönnberg has recently occurred and bred (not rarely) in eastern Sweden. Birds breeding in Mediterranean appear to be separable (*L. a. michahellesii*).

LARUS FUSCUS

454. *Larus fuscus fuscus* L.—THE SCANDINAVIAN LESSER BLACK-BACKED GULL.

LARUS FUSCUS Linnæus, *Syst. Nat.*, ed. x, i, p. 136 (1758—Europe. Restricted typical locality: Sweden).

DESCRIPTION.—*Adult male and female. Winter and summer.*—Like *L. f. affinis* but head and neck in winter considerably less streaked and sometimes without streaks; mantle, scapulars, back and wing-coverts much darker and like *L. marinus* slate-black, becoming browner black when worn; primaries more uniform brown-black usually only a little paler and browner on inner webs and paler wedge very ill-defined, subterminal white on 2nd usually more restricted and only rarely a white mirror on 3rd; secondaries brown-black broadly tipped white; primary-coverts brown-black. Moults to winter appears to be rather later than in *L. f. affinis*.

Nestling.—(Not examined.)

Juvenile and first winter.—Not to be distinguished from *L. f. affinis*. *First summer.*—New feathers of mantle rather darker than in *L. f. affinis*. Body-moults (as in *L. argentatus*) only partial, varying number of juvenile feathers being retained, no moults wings or tail.

Second winter and summer.—As *L. f. affinis* but mantle, scapulars, back and wing-coverts much darker slate-black, tinged brown and becoming browner when worn, secondaries darker especially on inner webs.

Third winter and summer.—As adult but head and neck more streaked and flanks streaked in winter, tail usually mottled and clouded with black, secondaries with duller white tips and primaries with duller and much smaller whitish tips.

Measurements and structure.—♂ wing 420–450 mm., tail 145–

160, tarsus 59–66, bill from feathers 50–55 (12 measured). ♀ wing 405–420, bill 46–49. Structure as in *L. f. affinis*.

Soft parts.—As in *L. f. affinis*.

FIELD-CHARACTERS.—Differs only from *L. f. affinis* in colour of mantle which is slate-black like that of Great Black-backed and not slate-grey.

BREEDING-HABITS.—Similar in habits to British race. *Eggs*.—Also similar. Average of 22 Scandinavian eggs, 66.77×46.21 . Max. : 75.5×48.7 . Min. : 57.5×46.8 and 64.2×44 mm. *Breeding-season*.—From early May to late June but rather later in north, rarely before June. *Incubation*.—By both sexes. Period not exactly ascertained. Single brooded.

FOOD.—Varied, probably differing little from that of British race, but mainly fish. Naumann also mentions small mammals such as mice, dead birds, worms, insects (orthoptera, coleoptera, etc.), and eggs of other birds. Has been seen to pursue and kill a Lark.

DISTRIBUTION.—*Great Britain*.—Passage-migrant and occasional winter-visitor. Apparently scarce and few positive records ; mostly of single birds or two and three only : Lancs., Oct. 20 to March 21, Norfolk, May, Suffolk, Aug., probably Kent, Oct., Sussex, March (flock ten adults), Stirlingshire, Sept., Fifeshire, July, Wigtownshire, Nov.

DISTRIBUTION.—*Abroad*.—Breeds in northern Europe from Dwina to Scandinavia. Winters from Baltic to Mediterranean, Algeria (once), Italy, Egypt, to Red Sea and Persian Gulf, south to E. Africa.

455. *Larus fuscus affinis* Reinhardt—THE BRITISH LESSER BLACK-BACKED GULL.

LARUS AFFINIS Reinhardt, Vidensk. Meddel. Kjöbenhavn for 1853, p. 78 (1854—Greenland).

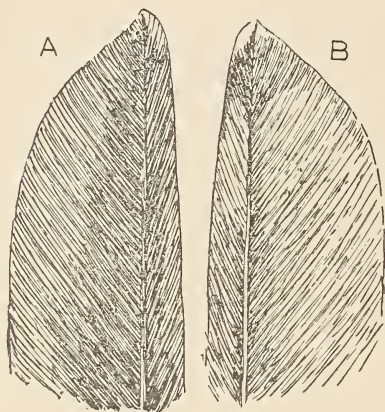
Larus fuscus affinis Reinhardt, Iredale, Bull. B.O. Club, XXXI, p. 69.

Larus fuscus britannicus Lowe, Brit. Birds (Mag.), VI, p. 2 (1912—British Isles, type Caithness, Scotland).

Larus fuscus Linnæus, Yarrell, III, p. 624 ; Saunders, p. 675.

DESCRIPTION.—*Adult male and female*. *Winter*.—Crown and sides of head white closely streaked black-brown, nape and hind-neck same but streaks widening out to blotches ; throat lightly and finely streaked brown ; mantle, back, scapulars, and wing-coverts slate-grey (varying somewhat in shade but always darker than *L. a. cachinnans* and never so dark as *L. marinus*), lower scapulars with long white tips ; rump, upper tail-coverts, whole of underparts and tail white ; primaries : 1st (undeveloped) slate-grey with most of outer web white, 2nd (outer) brown-black with base of inner web dull grey (much darker than Herring-Gull) extending in varying degree along inner edge towards tip, tip (40–55 mm.) white with black subterminal band (usually broader and with narrower

white apex than Herring-Gull, but varying and sometimes reduced to spot), inner web of tip sometimes clouded grey, 3rd as Herring-Gull but with white mirror usually smaller and often absent and grey of inner web and base much darker, rest of primaries as Herring-Gull, but grey much darker, whitish line at junction of



Tips of 8th primaries of juveniles of A. The British Lesser Black-backed Gull (*Larus f. affinis*); B. The Herring-Gull (*L. a. argentatus*).

grey and black on inner web more prominent, 7th with black subterminal band and 8th with varying amount of black; secondaries slate-grey with long white tips and mottled white at base and edge of inner webs; primary-coverts and all wing-coverts slate-grey but small coverts along edge and bend of wing white. This plumage is acquired by complete moult June–Nov. (all primaries not finished Jan.). *Summer*.—The body-feathers are moulted Dec.–April but not wing or tail-feathers nor wing-coverts. As winter but whole head and neck all round white (white apex of primaries

becomes mostly worn off and tips of slate-grey feathers become brownish).

Nestling.—Not to be distinguished from that of Herring-Gull.

Juvenile.—Like that of Herring-Gull but brown of both upper- and under-parts rather darker and bars and blotches on under-parts often better defined; tail-feathers with proximal portion usually more closely barred black-brown, and white bars much clouded and finely mottled with brown especially on outer webs (occasionally Herring-Gulls are closely barred and clouded); primaries blacker on outer webs and tips and darker on inner webs, extreme tips pale brown or whitish-brown but not white, inner feathers much as outer and not pale brown mottled darker as in Herring-Gull; primary-coverts blacker and with pale brown not whitish tips; other wing-coverts rather darker (sometimes very difficult to distinguish from some Herring-Gulls, inner primaries best distinction).

First winter.—As in Herring-Gull moult only partial. Crown and neck become rather whiter and less streaked but not so white as 1st winter Herring-Gull; new feathers of mantle and scapulars grey-brown with varying amount of black-brown on distal portion, buff-white tips and on scapulars and lower-mantle with dull buff marks at sides (whole upper-parts considerably darker than Herring-Gull); wings and tail as juvenile. *First summer*.—Partial body-moult as in Herring-Gull, head and neck and rump becoming

rather more white and less streaked, mantle and scapulars more grey-brown with less black-brown, many feathers having only central black-brown mark of varying size.

Second winter.—Crown and neck streaked much as adult winter but base of neck with more dark brown ; mantle, scapulars, and back dull slate-grey (with varying amount of brown tinge) to grey-brown with black-brown mesial streaks on some mantle-feathers, scapulars usually browner with varying black-brown centres and brown mottlings and with pale brown, dull white or pale grey tips ; rump and upper tail-coverts white with varying number of brown bars and spots ; (upper-parts are sometimes mostly slate-grey as adult) ; throat and upper-breast white lightly streaked brown, rest of under-parts considerably mottled, and flanks and under tail-coverts barred, brown ; tail much as juvenile and often indistinguishable but usually with black subterminal band rather narrower and more white at base but varying (considerably more black than in 2nd winter Herring-Gull) ; primaries as in juvenile but inner feathers with rather whiter tips and sometimes with paler brown streak on outer webs ; secondaries with pale brown inner webs, black-brown outer webs, tipped and fringed brownish-white and innermost feathers with brownish-white mottled subterminal band ; primary-coverts brown-black with paler tips ; greater coverts pale brown, outer webs dark brown fringed or mottled pale brown to whitish-brown ; median and lesser coverts with pale brown fringes and bases and dark brown centres (more uniform than in 1st winter). N.B.—Sometimes a few slate-grey wing-coverts and innermost secondaries are acquired. Two birds dated April from Angola were in full moult (inner primaries in one and outer in the other growing) ; new plumage was that of 2nd winter. Normal period appears to be June to Oct. *Second summer.*—Head and neck mostly white with or without varying number of pale brown streaks, mantle more uniform slate-grey, rump white, a few brown bars on upper tail-coverts, under-parts mostly white with few brown marks or bars, wing-coverts much worn and tips whiter than winter.

Third winter.—Like adult but hind-neck usually more marked brown ; mantle, scapulars, and wing-coverts more or less tinged brown (varying considerably) ; upper-breast, flanks and under wing-coverts with varying amount of brown marks but sometimes none ; tail sometimes white, sometimes considerably mottled and with fine wavy bars of brown-black ; 2nd primary with small white subterminal band and sometimes none, 3rd only very rarely with “mirror” ; primary-coverts varying brown-black tipped grey or pale brownish to grey more or less marked black ; secondaries sometimes as adult but usually with blackish streaks especially on inner feathers and sometimes much as second winter but more tinged grey. *Third summer.*—Head, neck and under-parts white as adult and grey of upper-parts not so tinged with brown as in winter.

Fourth winter and summer.—As adult but probably backward birds are as described under third winter but rather less brownish and with white tails, while most are indistinguishable from adults except for black streaks on primary-coverts.

Measurements and structure.—♂ wing 410–435 mm. (juv. 397–425), tail 148–165, tarsus 62–71, bill from feathers 50–56 (juv. 46–51) (12 measured). ♀ wing 385–405 (juv. 370–390), bill 45–51 (juv. 41–47). Primaries : 1st narrow, pointed and about two-thirds primary-coverts, 2nd longest, 3rd 3–10 mm shorter but sometimes as long, 4th 15–30 shorter, 5th 40–55 shorter. Rest of structure as Herring-Gull but tarsus and toes slightly more slender.

Soft parts.—Bill as described under Herring-Gull ; legs and feet (ad.) bright yellow, (juv. and 1st winter and summer) pale brownish-flesh, (2nd winter to 3rd winter) pale creamy-flesh with yellowish varying, (3rd summer) pale cream to yellow ; iris as in Herring-Gull ; orbital ring vermilion.

CHARACTERS AND ALLIED FORMS.—For differences of *L. f. fuscus* see under that form. *L. f. taimyrensis* (N. Russia, Siberia) is like *L. f. affinis* but larger. Slate-grey mantle and wings and yellow legs distinguish adult, for distinctions of juvenile see description, in other stages mantle and wings always darker than in Herring-Gull.

FIELD-CHARACTERS.—Adult resembles Greater Black-backed Gull but is much smaller, has yellow feet, and upper-parts are slate-grey rather than black, although in *L. f. fuscus* the tint is as deep as in the larger bird. Juvenile like that of Herring-Gull but slightly darker. In their slow progress to maturity the two species become easier to discriminate with each successive moult. Seen inland oftener than Herring-Gull especially at migration times. A wailing “kee-yah” and other cries akin to those of Herring-Gull, but usual alarm note at nesting-place is a guttural “ug, ug, ug.”

BREEDING-HABITS.—Nests usually in colonies, often on moors and flows at some distance inland, but also on grassy cliffs and flat-topped islands. *Nest.*—Composed of any material at hand, heather, grass, seaweed, etc. *Eggs.*—Usually 3, but sometimes 2 only, while 4 have been recorded. Ground-colour varies from pale greenish-blue to dark umber-brown, usually spotted and blotched with blackish-brown, occasionally very sparsely marked. Average of 100 eggs, 67.95×47.26 . Max. : 77.1×49 and 72.5×52.1 . Min. : 58.6×45 and 61.3×43 mm. *Breeding-season.*—From early May onward to June. *Incubation.*—Probably by both sexes, but confirmation desirable. Period said to be 21 days (Paynter), but estimate appears low. Single brooded.

FOOD.—Almost omnivorous : seen to kill Puffin (probably also Manx Shearwater), young Lapwing, etc., and devours carcasses of dead mammals and birds ; destructive to eggs of other species (Cormorant, Eider, Mallard, Grouse, Terns, and smaller birds)

eats fish (seen to capture and eat full-sized eel), mollusca (*Mya truncata*, etc.); worms, insects, including diptera (*Tipulidæ*) and larvæ, coleoptera, etc.; also grain (barley, etc.) and fragments of seaweed.

DISTRIBUTION.—*British Isles*.—Summer-resident (end Feb. or early March to end Aug. and often as late as Oct. and first half Nov., a very few stay winter probably in most years). Breeds coasts Isle of Wight, Cornwall, Devon (nested Kent, 1908), inland and coasts of Wales and isles, Lancs., Cumberland, Westmorland, Northumberland, and Farne Isles; many places coast, inland and isles of Scotland; several islands, lakes, and some inland places in Ireland. Non-breeding birds frequent in summer on all coasts, but more widely distributed on coasts in autumn and spring on passage when it also appears inland.

DISTRIBUTION.—*Abroad*.—Breeds Færoes, Channel Is., and west coast of France. (Breeding on coasts of Morocco, Canaries, and Azores has been suggested but there is apparently no authentic proof.) Winters from British Isles to Morocco, Senegal, Nigeria, Azores, and Canary Is., also western Mediterranean. Once Greenland. (Apparently often confounded in literature with *L. fuscus fuscus* and in life with *L. argentatus atlantis*, range therefore somewhat uncertain.) Represented in north Europe by *L. f. fuscus*, in Siberia by *L. f. taimyrensis*.

LARUS MARINUS

456. *Larus marinus* L.—THE GREAT BLACK-BACKED GULL.

LARUS MARINUS Linnaeus, Syst. Nat., ed. x, i, p. 136 (1758—Europe.

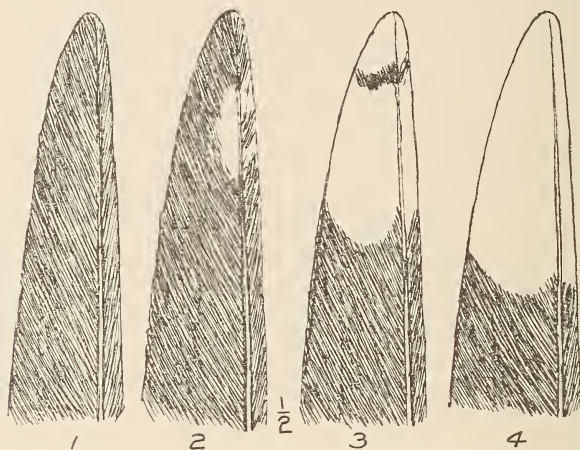
Restricted typical locality: Gotland).

? partim *Larus Waggellus* Tunstall, Orn. Brit., p. 3 (1771—Name for Brisson's Goéland varié and Ray's Waggellus. British Isles and other countries).

Larus marinus Linnaeus, Yarrell, III, p. 631; Saunders, p. 677.

DESCRIPTION.—*Adult male and female*. *Winter*.—Whole head and neck extending on to upper-mantle white, crown, under eyes, back and sides of neck narrowly and sparsely streaked brown, and feathers of lower-neck when fresh narrowly tipped slate-grey; mantle, back, scapulars and wing-coverts slate-black, upper-mantle washed grey, lower scapulars dark slate-grey tipped white (when worn upper-parts more brown-black and less slate); rump, upper tail-coverts, tail and whole under-parts white but under wing-coverts covering primaries mottled grey; primaries: 1st (undeveloped) slate-grey with outer web white except at tip, 2nd (outer) brown-black, inner web grey at base and narrowly edged whitish, tip (50–80 mm.) white (often more or less mottled grey), 3rd same but with grey of inner web extending further (to varying degree) towards tip, base of outer web fringed grey, white tip usually shorter and with subterminal black band varying greatly in width and usually much reduced or absent on outer web, 4th with only

apex (10–15 mm.) white, occasionally white subterminal spot on inner web, grey of inner extending sometimes far towards tip but varying, rest of primaries slate-grey to blackish slate-grey tipped white, 5th and 6th with black subterminal band extending somewhat up outer web with white line or patch at junction of grey and black, 7th with subterminal black band broken, often reduced to spot and sometimes absent, rest with no black ; secondaries slate-grey with



The Great Black-backed Gull (*Larus marinus*). Second (outer) primary of : 1. Juvenile and 1st winter. 2. 2nd winter. 3. 3rd winter. 4th. Adult.

long white tips and mottled white on inner webs ; primary-coverts and all wing-coverts slate-black but small coverts along edge and bend of wing white. This plumage is acquired by complete moult June to Nov. sometimes Dec. and occasionally outer primary still with sheath in Jan. *Summer*.—The body-feathers are moulted Jan.–March, but not wing- or tail-feathers nor wing-coverts. As winter but whole head and neck pure white, descending further on to mantle than in winter.

Nestling.—Like that of *L. a. argentatus* but black-brown markings on head often smaller and ground-colour of upper-parts usually paler or purer grey (not so buffish), under-parts also usually slightly paler and centre of breast and belly whitish.

Juvenile.—Like that of *L. a. argentatus* but under-parts white and less mottled, brown markings being fewer and better defined and markings of upper-parts slightly more contrasted ; tail-feathers whiter with brown-black subterminal band narrower especially on outer feathers and brown-black markings on proximal portion of feathers usually fewer and on a clearer white ground.

First winter.—Very much like *L. a. argentatus* but head and under-parts rather whiter and less streaked and upper-parts usually rather more barred with white or buff (new 1st winter feathers being more buff than old juvenile). The juvenile body-feathers

are partially moulted Sept. to Dec., but many juvenile feathers are retained and wing- and tail-feathers and wing-coverts are not moulted. *First summer*.—A partial body-moult similar to that of first autumn takes place Jan.–March. Head and neck become whiter and less streaked, under-parts rather whiter and upper-parts rather more barred with buff but often only a few new body-feathers are acquired.

Second winter.—Crown and back of neck whiter, less streaked than 1st winter; mantle, scapulars and wing-coverts darker and more grey-buff and dark barring not so prominent, basal part of feathers more blackish-slate and varying number of mantle-feathers and sometimes a few scapulars uniform black-slate with brownish tinge and often brownish tip; rump and upper tail-coverts more narrowly barred than in 1st winter; under-parts less barred brown; tail-feathers varying but with black usually more broken up by white or whitish wavy bars and marks; 2nd primary with a penultimate patch (varying in shape and size) of mottled brownish-white, inner primaries rather paler than in 1st winter with narrow dark brown subterminal wavy bar; secondaries with outer webs more greyish-buff not so white as in 1st winter and more vermiculated dark brown; primary-coverts much as 1st winter but usually darker and tips rather buffer not so white. This plumage is acquired by complete moult as adult but sometimes commencing as early as April. *Second summer*.—Some body-feathers are moulted Dec.–March. Crown and under-parts become rather less streaked and mantle usually more blackish-slate.

Third winter.—Head as adult but feathers of back of neck with brown tips much as 2nd summer; mantle, scapulars and back as adult but more or less tinged brown and usually with some feathers as 2nd winter especially on scapulars; rump and upper tail-coverts white with a few brown marks; under-parts white, sometimes a few brown marks on under tail-coverts and usually some dusky-brown edgings to under wing-coverts; tail white with black-brown fine, wavy barring varying greatly in amount individually; primaries as adult but tip of 2nd often with penultimate black band, white on 3rd sometimes much restricted and brownish, inner primaries usually browner, not so pure grey as in adult; secondaries as adult but usually some brownish and more or less vermiculated near tip; primary-coverts brown, tipped pale brown, outer feathers with black median streaks (varying in width); wing-coverts varying, sometimes almost like adult but tinged brown, sometimes mostly dark brown with paler tips. *Third summer*.—Head, neck, rump and upper tail-coverts pure white or with a few dark streaks.

Fourth winter and summer.—Probably usually indistinguishable from adult but some show black median streak on outer primary-coverts and some brown tinge on wing-coverts.

Measurements and structure.—♂ wing 485–510 mm. (juv. 475–505), tail 180–200, tarsus 76–84, bill from feathers 61–70 (12 British

measured). ♀ wing 457–470 (juv. 450–470), bill 55–61. Primaries : 1st narrow, pointed and about two-thirds primary-coverts, 2nd and 3rd longest, 4th 15–20 mm. shorter, 5th 45–55 shorter. Rest of structure as in Herring-Gull.

Soft parts.—Bill (ad.) pale yellow, angle bright vermilion, tip whitish bone-colour, gape vermilion, sometimes small dusky spot near tip of lower mandible, (juv. and 1st winter and summer and 2nd winter) brown-black, base of lower pinkish, tip pale horn, (2nd summer) as last but often some orange on angle, (3rd winter and summer) base and tip yellowish-white, more or less blackish in middle with varying amount of orange at angle, (4th winter) more like adult but with some blackish subterminally ; legs and feet livid bluish-flesh, webs pinker ; iris (ad.) very pale lemon, (juv. to 2nd summer) dark olive-brown, (3rd winter and summer) dark brown, grey-brown or sometimes buffish-yellow ; orbital ring and eyelids (ad.) vermilion, (juv. to 2nd winter) yellowish-brown, (2nd summer to 3rd summer) yellowish to dull orange.

CHARACTERS.—No subspecies. Large size and heavy bill and black on primaries distinguish it from other British Gulls.

FIELD-CHARACTERS.—Black mantle distinguishes adult from other Gulls except the paler *L. f. affinis* and *L. f. fuscus* from which it differs in its much greater size and flesh-coloured, not yellow, feet. Juvenile is noticeably paler than Lesser Black-backed or even Herring-Gull and is of course much larger. Very infrequent inland, but occurs on all coasts singly or in small numbers at all seasons, one or two being often associated in mobs of gulls that frequent harbours, estuaries and low-lying shores. Cries similar to those of Lesser Black-backed and Herring-Gulls ; at nesting-place the guttural “ug, ug, ug,” is deeper in tone than corresponding note of Lesser Black-backed.

BREEDING-HABITS.—Where numerous sociable in breeding-habits, colonies breeding on tops of stacks, islands, etc., but many pairs may be found nesting singly on islets in lakes, or on coastal cliffs. *Nest*.—Large, composed of heather, sticks, seaweed, grass, and a few feathers. *Eggs*.—Usually 2–3, but Pearson once found 5 ; ground-colour usually stone-buff to olive-brown, blotched and spotted dark umber-brown and ashy. Eggs with blue ground not infrequently occur and in Scandinavia an erythistic type is met with. Average of 100 British eggs, 77.29×53.94 . Max. : 82.1×53.3 and 77×57 . Min. : 69.4×49 mm. *Breeding-season*.—From beginning May to early June in British Isles. *Incubation*.—By both sexes. Period 26–28 days. Single brooded.

FOOD.—Very varied : carrion of all kinds, occasionally weakly ewes or lambs, small mammals (rat, rabbit, mole, voles, etc.), birds (wounded ducks of all kinds, Little Auk, Puffin, Shearwater, Petrels, and smaller birds), also young of many species (Cormorant, Gulls, Ducks), and eggs ; fish (including gurnard, eel, fluke and whiting),

mollusca, crustacea (shore-crabs, etc.), starfish, worms, insects (chiefly coleoptera), and some vegetable matter (leaves, grain, etc.).

DISTRIBUTION.—*British Isles.*—Resident. Breeds sparsely coasts of Cornwall, Scilly Isles, Lundy Isle, Wales, Lake District and Clyde Area, and commonly northwards and Scottish isles both sea-cliffs and inland. Does not breed in Forth nor southwards on east side. In Ireland increasing, and breeds rocky coasts and islands, especially west, and a few inland loughs north and west. In winter more widely distributed on all coasts.

DISTRIBUTION.—*Abroad.*—Breeds in northern Europe, from Lower Petchora to Iceland and down to about 50° north (nested 1921 on Bear Island). In winter to Canaries and Azores, and along Mediterranean to Egyptian coast, Caspian and Black Seas, Greenland, east coast and great lakes of North America to Labrador (breeding); in winter (casually) to Florida, and accidentally Bermuda.

LARUS HYPERBOREUS*

457. *Larus hyperboreus* Gunn.—THE GLAUCOUS GULL.

LARUS HYPERBOREUS Gunnerus, Leem's Beskr. Finn. Lapp., pp. 226, 283 (1767—Lapland).

Larus Islandicus Edmondston, Mem. Wernerian Soc. iv. p. 185 (1822—Shetland Is.) On p. 506 described *Larus glaucoides* under same name.

Larus glaucus O. Fabricius, Yarrell, III, p. 636; Saunders, p. 679.

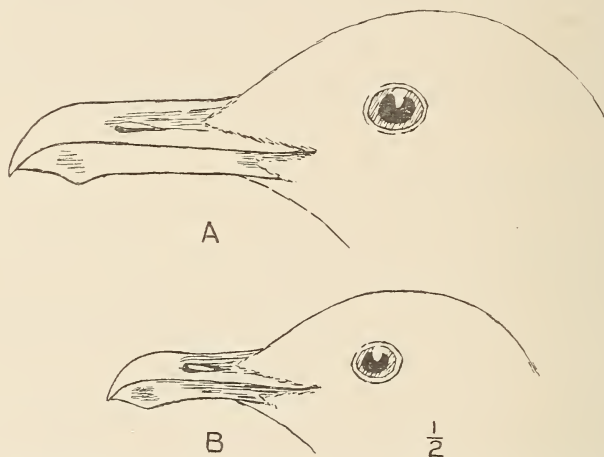
Larus glaucus Brünn., Hand-List (1912), p. 202.

DESCRIPTION.—*Adult male and female.* *Winter.*—Whole head, throat and neck encroaching on to upper-mantle white, head and throat lightly streaked pale brown and feathers of back of neck tipped same (N.B.—Females are more heavily streaked and mottled brown than males); mantle, scapulars and back ash-grey, lower scapulars tipped white; rump, upper tail-coverts, tail and whole under-parts, including under wing-coverts and axillaries white; primaries pale ash-grey tipped white, shafts whitish-straw, outer web of 2nd (outer) primary nearly white; secondaries ash-grey, tipped white; primary-coverts and other wing-coverts ash-grey, but small coverts round edge of wing white. This plumage is acquired by complete moult July to Nov. or Dec., and occasionally outer primaries are not fully grown even as late as Feb. *Summer.*—The body-feathers are moulted March–April, but not wing- or tail-feathers nor wing-coverts. Like winter but whole head, neck and throat pure white, unstreaked.

Nestling.—Like that of *L. marinus* (upper-parts rather paler and greyer than in *L. argentatus* and centre of under-parts whiter) but dark markings on upper-parts rather more obscured and paler.

* Brünnich's name *glaucus* 1764 is preoccupied by *L. glaucus* Pontopidan 1763, we must therefore adopt the name of *hyperboreus* Gunnerus 1767.—E.H.

Juvenile.—Varying somewhat in darkness of upper- and under-parts. Head thickly streaked brown, feathers with greyish-white fringes; back of neck and upper-mantle with distal portions of feathers brown or pale brown with somewhat faint spots or bars of creamy-buff; rest of upper-parts more cream or whitish-buff with irregular and wavy brown to pale brown bars and markings, subterminal bars being narrow on scapulars and broader on rump and upper tail-coverts; chin whitish with few streaks; throat and sides of neck streaked brown; upper-breast mottled (or sometimes with barred appearance) brown or dusky-brown and dull white; rest of breast and belly dusky-brown somewhat mottled dull white;



A. The Glaucous Gull (*Larus hyperboreus*). B. The Iceland Gull (*L. glaucoides*).

lower flanks and under tail-coverts dull white broadly barred brown; under wing-coverts and axillaries pale brown with whitish bases and somewhat obscure whitish bars at tips of feathers; tail brown with markings of dull white varying in individuals but clearer along edges and tips and at bases of feathers, more obscured or absent towards centre and broader on outer feathers; primaries and secondaries with outer webs and tips pale brown, tips with a small penultimate dark brown mark and usually mottled darker brown, extreme tips and inner webs dull brownish-white, shafts brownish-straw; primary-coverts pale brown tipped cream-buff and with penultimate dark brown mark; greater coverts much as secondaries but rather more mottled on outer webs; innermost secondaries and greater coverts, median and lesser coverts as mantle but upper series of lesser more uniform pale brown.

First winter.—As juvenile but not quite so dark. The juvenile body-plumage is only partially moulted and often very little, and tail, wing and wing-coverts are not moulted. *First summer*.—Another partial body-moult takes place in spring. Plumage as

winter but upper-parts with more creamy-white and fewer and paler brown bars ; under-parts not so dark.

Second winter.—Resembling first summer but whiter ; head less streaked ; rest of upper-parts, tail, secondaries and wing-coverts more creamy-white with less and fainter brown bars, mantle sometimes tinged grey ; under-parts paler ; primaries and primary-coverts brownish-white with pale brown mottlings and subterminal patches (outer primaries often nearly pure white without brown markings). *Second summer.*—As winter but whiter owing to wear and gradual fading of retained winter-feathers, exposed portions of which become white or with only trace of brown markings. N.B.—Body-moult is only very partial but new feathers are like those of winter though often some ash-grey feathers are grown on mantle. Some birds in 2nd winter appear almost pure white but concealed portion of plumage has pale brown markings. There is considerable individual variation and some birds have brown markings much fainter and fewer than others but whitest stage is reached in second summer when feathers are much worn before 3rd autumn moult.

Third winter.—Crown heavily streaked brown and feathers of nape and back of neck with distal portions brown and many of them often fringed creamy-white ; mantle, scapulars and wing-coverts pale buff-brown with a few streaks and sometimes narrow bars of darker brown especially on wing-coverts, and feathers of mantle and scapulars frequently more or less ash-grey or tinged ash-grey and many feathers fringed creamy-white ; rump, upper and under tail-coverts and lower flanks broadly barred brown ; under-parts pale brown mottled white ; tail and secondaries pale brown finely barred and mottled creamy-white ; primaries and primary-coverts almost uniform very pale brown shading to white at tips and on inner webs of primaries, with faint mottling or freckling of darker brown at tips especially of inner primaries, but usually this is scarcely apparent or absent in primary-coverts and outer primaries. N.B.—These frecklings are very fine and do not form any definite subterminal brown mark as in primaries and primary-coverts of 1st and 2nd winters. *Third summer.*—No certain example examined but exposed portions of feathers of wings appear to become whiter or nearly white by wear and fading and head nearly white and mantle with more ash-grey by moult.

Fourth winter.—Like adult but with small but varying amount of fine pale brown freckling, barring or mottling on rump, upper tail-coverts, under-parts and tail ; inner secondaries, greater wing-coverts and some median and lesser only tinged grey and also with fine pale brown frecklings ; primaries ash-grey with more or less tinge of pale brown and occasionally some faint freckling, tips white, primary-coverts with often considerable brown tinge. N.B.—In some examples brown markings are absent from some parts above detailed. *Fourth summer.*—As winter but head and back of neck white as in adult or with a few pale brown streaks on crown and

exposed portions of primaries, inner secondaries and some wing-coverts faded to white.

Fifth winter.—Apparently like adult but probably some forward individuals become like adult in fourth winter.

Measurements and structure.—♂ wing 450–490 mm. (juv. 450–470), tail 170–195, tarsus 70–75, bill from feathers 60–70 (juv. 55–63) (12 measured). ♀ wing 440–480 (juv. 435–445), bill 53–61 (juv. 52–57). Primaries: 1st narrow, pointed and about two-thirds primary-coverts, 2nd longest, 3rd usually as long but sometimes 5 mm. shorter, 4th 10–25 shorter, 5th 35–45 shorter. Rest of structure as in Herring-Gull.

Soft parts.—Adult and 1st winter as in Herring-Gull and apparently other stages as in that species, but orbital ring in adult vermilion.

CHARACTERS.—No subspecies recognized. Large size and deeper bill distinguish it from Iceland Gull, and absence of black at tips and white or whitish shafts of primaries at all ages from other British Gulls.

FIELD-CHARACTERS.—Adults can hardly be confused with any bird except Iceland Gull, which they closely resemble except in size, being considerably larger. Size equal to *L. marinus*, but Glaucous has pearl-grey mantle and white primaries. Immature birds can generally be distinguished by large size and brownish markings, but white primaries. Rather silent as a rule, but has a variety of wailing notes, not unlike those of Herring-Gull. (F.C.R.J.)

BREEDING-HABITS.—Social in its breeding-habits; sometimes a few pairs nesting together, but occasionally in good sized colonies. *Nest.*—Usually bulky where material is available, but sometimes quite scanty, generally built of clumps of moss, with admixture of plants (*Cochlearia*, etc.), also at times seaweed only and generally placed on slopes of cliffs above colonies of rock-breeders, but also on low shingly islands, on sandy islets, occasionally at foot of cliffs or on pinnacles and stacks. *Eggs.*—Normally 2–3 but 4 have been recorded, ground-colour ranging from stone-colour to umber-brown, occasionally pale bluish-green or rarely reddish-brown, blotched, spotted or streaked with dark umber and ashy. Average of 115 Spitsbergen eggs, 76.81×53.98 . Max.: 89×60.9 and 79.6×63.2 . Min.: 69×56.1 and 75.5×50.8 mm. *Breeding-season.*—From end May to mid-June in Spitsbergen, but late layings may be found till July. *Incubation.*—Doubtful whether male takes part. Period 27–28 days (Svenander). Single brooded.

FOOD.—Carrion (dead whales, blubber, reindeer, walrus, bear, etc.), birds (Little Auk, Kittiwake, Guillemot, young Ivory-Gull, wounded Ducks, Coot, etc.), also great numbers of eggs and young of Brännich's Guillemot; droppings of large mammals (Polar bear and seal), fish (alive and stranded), crustacea (chiefly crabs), amphipoda, star-fish, echini, mollusca, garbage of all kinds, algæ (chiefly *Alaria esculenta*), and berries of *Empetrum nigrum*.



SOME BRITISH GULLS IN FLIGHT TO ILLUSTRATE DIFFERENCES AND SIMILARITIES. ABOUT 1-20TH NAT. SIZE.

1, The Iceland Gull (*Larus glaucoides*) ad. summer. 2, The Herring-gull (*L. a. argentatus*) ad. summer. 3, The British Lesser Black-backed Gull (*L. f. affinis*) ad. summer. 4, The Great Black-backed Gull (*L. marinus*) ad. summer. 5, The Little Gull (*L. minutus*) 1st winter. 6, The Common Gull (*L. c. canus*) 1st winter. 7, The Black-headed Gull (*L. t. ridibundus*) 1st winter. 8, Adult summer and 9, 1st winter of The Kittiwake Gull (*Rissa t. tridactyla*).

DISTRIBUTION.—*British Isles*.—Winter-visitor, exceptional summer. Most frequent and occasionally abundant east coast Great Britain from Shetlands to Norfolk. Frequent north and west Ireland. Elsewhere rare and occasional, although apparently regular O. Hebrides. Adults very rare in south and west.

DISTRIBUTION.—*Abroad*.—Breeds Iceland, Bear Island, Spitsbergen, coasts and islands of north Russia and Siberia, Greenland and N. America south to Newfoundland. In winter south to Mediterranean, Black and Caspian Seas, in Pacific Ocean to Kauai and Maui (Hawaiian Is.), in America to California, Pennsylvania, N. Carolina and Indiana. Once Madeira, once Azores, once Gulf of Akaba (Red Sea).

LARUS GLAUCOIDES *

458. *Larus glaucoides* Meyer—THE ICELAND GULL.

LARUS GLAUCOIDES Meyer, Zus. & Ber. Meyer & Wolf's Taschenb. deutsch. Vögelk. p. 197 (1822—Seas of Arctic zone, for ex. Iceland, sometimes migrants German coasts. Restricted typ. loc. Iceland).

Larus islandicus Edmonston, see under *L. hyperboreus*.

Larus leucopterus Faber, Yarrell, III, p. 642; Saunders, p. 681; Hand-List. (1912), p. 202.

DESCRIPTION.—*Adult male and female*. Winter and summer.—Coloration and apparently also moults as in Glaucous Gull.

Nestling.—(Not examined.)

Juvenile and first winter and summer.—As in Glaucous but brown barring on mantle and scapulars usually rather narrower; shafts of primaries often tinged brown but this is not invariable.

Second winter and summer.—As in Glaucous judging from few examples examined.

Third winter and summer.—From very meagre material available perhaps rather more freckled pale brown and not so uniform on upper-parts as in Glaucous Gull.

Fourth winter and summer.—As in Glaucous Gull.

Measurements and structure.—♂ wing 405–430 mm. (juv. same), tail 155–175, tarsus 55–61, bill from feathers 40–50 (10 measured). ♀ wing 390–405 (juv. 380–395), bill 39–45. Primaries: 1st pointed and about two-thirds primary-coverts, 2nd longest, 3rd as long or 5–8 mm. shorter, 4th 17–20 shorter, 5th 40–50 shorter. Rest of structure as in Herring-Gull.

Soft parts.—Apparently as in Glaucous Gull.

CHARACTERS.—Smaller size distinguishes it from Glaucous Gull and absence of black on primaries from other British Gulls.

BREEDING-HABITS.—Breeds in colonies, sometimes together with other species and sometimes by itself, sometimes on ledges of cliffs

* It has now been shown that *L. leucopterus* Faber, 1822, is preoccupied by *L. leucopterus* Vieillot, 1821 (see Austr. Av. Rec., IV, p. 156).

at varying heights, but also on low-lying coasts. *Nest*.—Large, built chiefly of moss and grass. *Eggs*.—2–3 in number, like those of Glaucous Gull, but decidedly smaller: ground-colour stone or clay, with umber spots and blotches. Average of 61 eggs, 68.64×48.26 . Max.: 75.8×49.7 and 72.2×51.3 . Min.: 62.5×49.6 and 65.7×44.7 mm. *Breeding-season*.—From end May to early July. *Incubation*.—No details available. Single brooded.

Food.—Small fish of northern species (*Salmo arcticus*, *Clupea sprattus*, young herrings, etc.), also stranded and dead fish and fish-refuse, as well as carrion of all kinds: crustacea, mollusca; and in winter largely on vegetable matter (grain, etc.). Young said to feed on berries of *Empetrum nigrum* (Hagerup).

DISTRIBUTION.—*British Isles*.—Winter-visitor, sometimes until April and May. Much same as Glaucous but decidedly scarcer. Many Cornwall and Devon winters 1872–3 and 1874–5.

DISTRIBUTION.—*Abroad*.—Breeds apparently Jan Mayen, certainly Greenland and arctic America to Victoria Land and Boothia Peninsula. [According to Smirnow, 1901, Novaya Zemlia, but this requires confirmation.] In winter south to Iceland, Scandinavia, Færoes, Bay of Biscay (rare), casual Baltic, Italy, Madeira; in America casually to Great Lakes, to Long Island, accidentally Nebraska, Maryland, California.

Genus *RISSA* Steph.

RISSA Stephens, Shaw's Gen. Zool., XIII, 1, p. 180 (1826—Monotype: *R. brunnichii* = *tridactyla*).

Tarsus shorter than middle toe and claw. Hind toe rudimentary, as a rule without claw, but sometimes tiny claw present. Middle rectrices very slightly shorter, thus tail not absolutely square. Two species in northern seas.

RISSA TRIDACTYLA

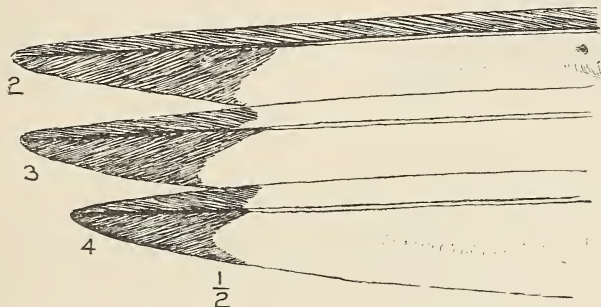
459. *Rissa tridactyla tridactyla* (L.)—THE KITTIWAKE GULL.

LARUS TRIDACTYLUS Linnæus, Syst. Nat., ed. x, i. p. 136 (1758—N. Europe. Restricted typical locality: Great Britain).

Rissa tridactyla (Linnæus), Yarrell, III, p. 650; Saunders, p. 683.

DESCRIPTION.—*Adult male and female*. *Winter*.—Fore-head white; crown and nape dark blue-grey with some white showing, feathers having white bases and inclining to streaky appearance on crown; lower-neck and upper-mantle white clouded grey, feathers being tipped dark grey; mantle, back, upper-rump and scapulars dark blue-grey, long scapulars tipped white; lower-rump, upper tail-coverts and tail white; anterior corner of eye streaked blackish-grey; posterior ear-coverts and sides of neck dark blue-grey; rest of under-parts white but under wing-coverts along edge of wing tipped grey; primaries: 2nd (outer) with long tip and outer web

black, shaft grey, inner web pale blue-grey shading to white on inner edge, 3rd and 4th with only long tips black, outer web pale blue-grey, 5th with shorter black tip and small white apical spot, 6th with subterminal black band and white tip, sometimes band broken into two spots and occasionally no black, sometimes tip blue-grey as rest of feathers, rest of primaries pale blue-grey shading to white on inner edge of inner webs to tips, 7th occasionally with black subterminal spot on one or both webs; secondaries blue-grey, tipped white; primary-coverts and all wing-coverts dark blue-grey as mantle. This plumage is acquired by complete moult June.



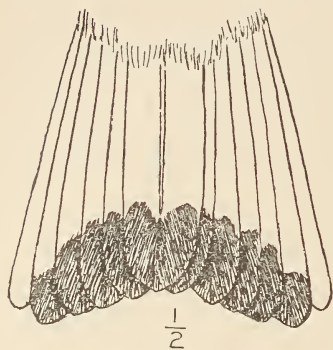
Tips of three outer primaries of adult Kittiwake Gull (*Rissa t. tridactyla*)

to Dec. *Summer*.—The body-feathers are moulted March and April, but not wing- or tail-feathers, nor wing-coverts. Plumage as winter but whole head and neck and upper-mantle pure white.

Nestling (Plate 11).—Closely covered with longish down with fine silky tips. Whole head and neck and tips and edges of wings glossy-white tinged cream; rest of upper-parts dark grey-brown with varying amount of creamy-white intermixed; whole under-parts white. Down is succeeded by juvenile feathers to tips of which it clings.

Juvenile.—Whole head white, blackish-grey round eye and patch on posterior ear-coverts, nape tinged grey; back of neck and upper-mantle white, feathers with long black tips (forming broad black collar); rest of upper-parts as adult but feathers of back lightly tipped black; under-parts white; tail white broadly tipped black but outermost feathers without black or with only narrow tip to inner webs; primaries: 2nd (outer) brown-black with inner half of inner web white but not extending to tip which is brown-black, 3rd and 4th same but with rather more than half inner web white, 5th with shorter black tip and white of inner web extending nearly or quite to shaft and base of outer web fringed grey, 6th with black tip, small white apex, ash-grey outer web (extending on to inner web) with brown-black streak near base and rest of inner web white, 7th ash-grey outer web and half inner web, rest of inner web and tip white with brown-black subterminal band,

rest of primaries ash-grey with white tips and inner edges of inner webs ; secondaries white with basal part of outer webs ash-grey, innermost feathers darker grey, outer webs with broad brown-black streaks on distal halves ; primary-coverts brown-black with grey inner webs and inner feathers tipped grey ; feathers along edge of wing brown-black slightly fringed grey ; greater coverts blue-grey with long white tips ; median coverts same but only fringed white ; lesser coverts and inner median and greater blue-grey broadly tipped black forming broad black band down inner edge of folded wing.



Tail of juvenile Kittiwake Gull (*Rissa t. tridactyla*) showing slightly forked shape.

First winter.—Like juvenile with varying number of body-feathers renewed, back of head and nape becoming more or less blue-grey and some blue-grey feathers on back of neck and upper-mantle but most are juvenile, black tips of which wear down to some extent ; back blue-grey. The juvenile body-feathers are only very partially moulted Oct.–Nov. *First summer.*—A partial and varying body-moult appears to take place in spring, but very few are available for examination. Much like first winter but usually more grey on nape ; hind-neck and upper-mantle white with no black or only a few black-tipped feathers.

Second winter and summer.—Like adults but often outer primary-coverts with black streaks and 3rd primary with some black on outer web.

Measurements and structure.—♂ wing 300–325 mm., tail 112–127, tarsus 33–36, bill from feathers 33–38 (12 British measured). ♀ wing 295–315, bill 33–35. Primaries : 1st narrow, pointed and about two-thirds primary-coverts, 2nd longest, 3rd 2–5 mm. shorter, 4th 10–22 shorter, 5th 30–40 shorter. Rest of structure as Bonaparte's Gull, but tarsus comparatively short, hind-toe very diminutive and usually without a claw but occasionally this is present. Tail in adult almost square but central feathers slightly shorter, in juvenile tail definitely forked to depth of about 10 mm., but outermost feathers shorter than next.

Soft parts.—Bill (ad.) pale greenish-yellow, yellower in summer, (juv.) black ; inside mouth orange-red ; legs and feet (ad.) brown-black, (juv. to 2nd winter) brown ; iris dark brown ; orbital ring orange-red.

CHARACTERS AND ALLIED FORMS.—*R. t. pollicaris* (Alaska, Bering Sea) is larger and has longer black tips to primaries, juvenile has black tips to feathers of nape. Size and in adult yellowish bill and black legs, black-tipped primaries without white “mirrors,” in young

black hind-neck and lesser and inner wing-coverts with white under-wing distinguish species.

FIELD-CHARACTERS.—Adult has black feet, waxy yellow bill, and mantle of a darker tint than in Common Gull. Is rather smaller than that species, but larger and of more robust build than Black-headed. Juvenile is not smoke-grey like Common Gull, but has white under-parts like Black-headed, a blue-grey mantle spotted with brown, and black bands across nape and base of hind-neck. Outstanding characters in flight at all ages are lack of Black-headed's white band along front edge of wing and broad white sub-terminal wing-patch of Common, Kittiwake's wing-tips looking at a little distance uniformly black. Never seen inland except as a storm-driven and exhausted waif. Sometimes plunges for food like Terns completely immersing body. Call a clear "uck, uck, uck," but rather silent except at breeding stations where cliffs resound with loud cry, "kitti-wa-a-ke."

BREEDING-HABITS.—In British Isles nests in colonies on precipitous rocks by sea or in sea-caves. *Nest*.—Built of moss, grass, sea-weed, etc., and fixed to some (often very slight) projection or ledge of rock, being neatly constructed with a well-defined cup. *Eggs*.—Normally 2, but sometimes 3 or occasionally 1 only, ground-colour varying from pale bluish-grey to yellowish-stone and light brown, blotched and spotted chiefly towards large end, with warm brown and ashy-grey. Average of 100 British eggs, 55.97×40.87 . Max. : 59.3×43.4 . Min. : 47.1×35.3 mm. *Breeding-season*.—From end May onward to June. *Incubation*.—Apparently by both sexes. Period : 26th day (Evans) ; 21–24 days (Hantzsch). Single brooded.

FOOD.—Mainly small fish ; also small crustacea (*Idotea*, etc.), amphipoda and mollusca, while occasionally echini, insects, including coleoptera and diptera, earthworms, on one occasion a pigmy shrew, and vegetable matter (grass, cereals, aquatic plants, etc.).

DISTRIBUTION.—*British Isles*.—Resident and winter-visitor. Breeds abundantly precipitous coasts and islands, Ireland, and north and west Scotland (especially Orkneys, Shetlands, and Hebrides), also Isle of Man, Wales, Lundy Island [in Scilly Isles apparently not since 1900], not south coast England, and only in a few places on east side Great Britain, viz. Flamborough Head (Yorks.), Farne Isles (Northumberland), St. Abb's Head (Berwick), Bass Rock, Isle of May (Forth), Fowlsheugh (Kincardine), Dunbury (Aberdeen), and borders Aberdeen and Banff. In winter widely distributed on all coasts Great Britain, numbers being increased by immigrants, but in Ireland apparently scarcer in winter. Rare inland.

DISTRIBUTION.—*Abroad*.—Breeds from western arctic Asia, Spitsbergen, Franz-Josef Land, Novaya Zemlia, Jan Mayen, and arctic Europe to north-west France, and from Wellington Channel and north Greenland to Gulf of St. Lawrence, and winters from latter south to New Jersey, and casually to Virginia, Bermudas, and

Great Lakes, and in Europe south to Mediterranean, the Atlantic islands from Madeira to Azores, and Cape Verde Islands, Senegal, and Caspian Sea. Replaced by *R. t. pollicaris* on coasts of north Pacific, Bering Sea and adjacent ocean, south to Commander and Aleutian Islands, in winter south to California.

Genus PAGOPHILA Kaup

PAGOPHILA Kaup, Skizz. Entw.-Gesch. & Natürl. Syst. Eur. Thierw., pp. 69, 196 (1829—Monotype : *Larus eburneus*).

Generally much like *Larus*. Adults quite white in summer and winter. Tarsus not quite as long as middle toe with claw. Tibia feathered almost to joint, while in *Larus* a conspicuous portion of lower tibia is bare. Tarsi and feet very rough, back of tarsus not distinctly reticulate but with callous rugosities in cross-rows. One species.

PAGOPHILA EBURNEA

460. *Pagophila eburnea* (Phipps)—THE IVORY-GULL.

LARUS EBURNEUS Phipps, Voy. N. Pole, App., p. 187 (1774—Coast of Spitsbergen).

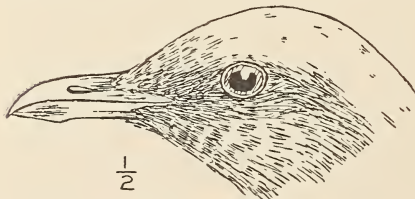
? *Larus albus* Gunnerus, Leem, Beskr. Finn. Lapp., p. 285 (1767—N. Norway).

Pagophila eburnea (Phipps), Yarrell, III, p. 656 ; Saunders, p. 685.

DESCRIPTION.—*Adult male and female. Winter and summer.*—Whole plumage pure white with shafts of primaries pale straw-colour. Plumage acquired by complete moult June (sometimes May) to Oct., and by moult confined to body in Feb. (only one in spring-moult (Feb.) examined).

Nestling.—Closely covered with longish down with fine hair-like tips. Tips of down white, bases ashy blue-grey giving general appearance of pale ash-grey. No pattern or markings.

Juvenile.—Fore-head and lores dark lead-grey mottled white, feathers being narrowly fringed white, more uniform dark lead-



Juvenile Ivory-Gull (*Pagophila eburnea*).

grey round eye ; rest of head, chin and throat white, feathers with subterminal dark lead-grey mottlings or patches ; rest of upper-parts white, varying number of feathers on back of neck and upper-mantle, scapulars and longer upper tail-coverts with spot-like

subterminal brown-black marks ; rest of under-parts white with some subterminal brown-black marks on flanks and often a few here and there on breast ; axillaries white ; under wing-coverts mostly

white but those along edge of wing with subterminal brown-black marks ; tail white with narrow (but varying) subterminal brown-black band ; wing-feathers and wing-coverts white with subterminal brown-black tips, usually restricted in secondaries, often to a shaft-streak and varying number of coverts and often some secondaries pure white.

First winter and summer.—Like juvenile but lead-grey usually confined to fore-head and chin and fore-part of lores, crown and throat and rest of under- and upper-parts often without any black spots but sometimes a few here and there and scapulars apparently always spotted as juvenile ; tail and wings as juvenile, but brown-black spots on coverts often becoming lessened by wear. The juvenile body-plumage is moulted in Sept., but not wing- or tail-feathers nor wing-coverts and varying number of body-feathers and especially scapulars are retained. None in spring-moult examined.

Second winter.—After complete moult apparently becomes as adult.

Measurements and structure.—♂ wing 335–350 mm. (juv. 328–350), tail 135–150, tarsus 38–42, bill from feathers 34–38 (juv. 30–35), (6 measured). ♀ wing 320–345 (one 360), bill 34–38. Primaries : 1st narrow, pointed and about two-thirds primary-coverts, 2nd longest, 3rd as long or 5–10 mm. shorter, 4th 10–25 shorter, 5th 25–45 shorter ; outer web of 2nd narrow. Tibia feathered nearly to joint, tarsus and toes rather stout, webs concave, claws strong and somewhat curved, that of middle toe considerably dilated. Bill rather stout and gonys comparatively short.

Soft parts.—Bill (ad.) base greenish-horn or slate-blue, rest yellowish, tip yellowish-red ; legs and feet black ; iris black-brown ; orbital ring vermilion.

CHARACTERS.—No subspecies. Size and pure white of adult and black legs, black spot-like marks on upper-parts of young distinguish species.

FIELD-CHARACTERS.—Though decidedly smaller than Glaucous, is a fair-sized bird, distinguishable when adult by its pure white plumage, black feet, and yellow and reddish bill from other northern Gulls. Immature birds have a few dark spots on wings and head. Carriage peculiar, tail depressed and head raised ; fierce and aggressive in habits. Cry a very harsh and discordant note ; repeated once or twice in flight. (F.C.R.J.).

BREEDING-HABITS.—Nests in colonies on rocky boulder strewn shores, sometimes apparently also on cliffs, but apparently always where there is much ice on which seals can lie out, which incidentally renders breeding-haunts inaccessible till late in season. *Nest.*—Built of algæ and mosses, lichens, etc. *Eggs.*—Normally 2, not unlike eggs of Common Gull, ground-colour stone-colour or greenish to brownish, blotched and spotted with dark brown and ashy-grey.

Average of 41 eggs, 60.45×43.27 . Max. : 69.3×41.5 and 60×46.2 . Min. : 53×40.5 and 59.7×40 mm. *Breeding-season*.—Latter part June or early July. *Incubation*.—Apparently by both sexes. Period unknown. Single brooded.

Food.—In breeding-haunts mainly droppings of mammals (seals, walruses and bears), also carcasses of killed mammals (chiefly flesh and blood, less frequently blubber), fish, crustacea, mollusca (pteropoda, etc.), and larvæ of diptera.

DISTRIBUTION.—*British Isles*.—Rare vagrant. About sixty. Most frequent Shetlands and Orkneys, but has occurred many counties Great Britain (Yorks., seven), and five in Ireland. From autumn to spring and as late as June.

DISTRIBUTION.—*Abroad*.—Breeds in high arctic latitudes around North Pole, wintering south as far as north France, Denmark, Lake Geneva (once), British Columbia, Lake Ontario and Long Island in America.

Genus STERCORARIUS Briss.

STERCORARIUS Brisson, Orn., I, p. 56 (1760—Type by tautonymy *stercorarius* = *Larus parasiticus* L., according to vol. VI, p. 149).

Differs so much from other *Laridæ* as to be generally recognized as subfamily, *Stercorariinæ*, or even as separate family. Bill reminding one of *Tubinares*, upper consisting of four fairly distinct parts, a "cere," two lateral portions, and the distal part, which is strongly hooked. Tarsus and feet rough, scutes and reticulations being rather prominent; claws strong, hooked, sharp. Many authors separate two genera, *Stercorarius* with rather elongated, and *Megalestris* larger and with very little elongated middle rectrices; this, however, is not logical, as the other species are about equally different. The differences are in our opinion not such as to demand more than one genus, but if more than one are admitted, we must have four: *Stercorarius*, *Labbus*, *Coprotheres*, and *Cataractes* ("Megalestris").

Key to species of genus STERCORARIUS.

(Adults only.)

- | | | |
|-----|---|--------------------------------|
| 1 { | Much larger, bill over 45, wing over 380 mm. | <i>S. skua</i> , p. 777 |
| 1 { | Much smaller, bill under 45, wing under 380 mm. 2 | |
| 2 { | Middle rectrices very long and pointed, more than three times as long as rest of tail | <i>S. longicaudus</i> , p. 787 |
| 2 { | Middle rectrices not quite twice as long as rest of tail 3 | |
| 3 { | Middle rectrices at tip narrow and pointed | <i>S. parasiticus</i> , p. 783 |
| 3 { | Middle rectrices not considerably narrowed nor pointed at tip | <i>S. pomarinus</i> , p. 779 |

STERCORARIUS SKUA

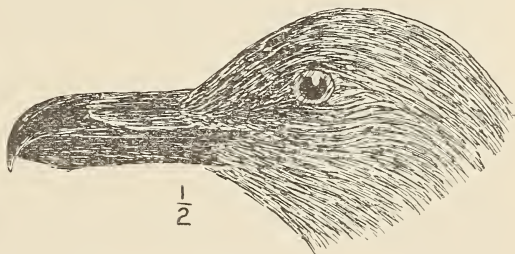
461. *Stercorarius skua skua* (Brünn.)—THE GREAT SKUA.

CATHARACTA SKUA Brünnich, Orn. Bor., p. 33 (1764—Færøes and Iceland).

Stercorarius catarrhactes (Linnæus), Yarrell, III, p. 662.

Megalestris catarrhactes (Linnæus), Saunders, p. 687.

DESCRIPTION.—*Adult male and female*.—Fore-head and crown dark brown, distal portions of feathers with broad central streaks (not very prominent) of pale rufous-brown (often a few white feathers on head); feathers of back and sides of neck lanceolate, and dark brown with prominent straw-yellow median streaks; mantle, scapulars and upper tail-coverts dark brown, distal portions of feathers with broad central streaks of rufous, centre of tips paler and becoming whitish when worn; back and rump same but rufous and pale tips less conspicuous; lores, round eyes and chin more uniform dark brown, but feathers more or less tipped yellow-buff; throat streaked and marked rufous and pale buff but not so prominently as sides of neck; rest of under-parts grey-brown mottled rufous and feathers of flanks and under tail-coverts with more prominent central tips of pale buff and rufous; axillaries and under wing-coverts dark brown, feathers with varying amount of rufous at tips; tail black-brown, white at extreme base concealed by coverts; primaries black-brown, white at base (on outer 5 feathers 30–60 mm. beyond coverts and making larger white patch on under-wing), in outer (2nd) primary outer web only white at extreme base which is almost concealed by coverts, four inner primaries and secondaries black-brown with concealed basal part of feathers white, shafts of primaries whitish-straw almost to tips and those of secondaries on basal two-thirds; primary-coverts black-brown; rest of wing-coverts as upper-parts but greater with only small rufous and pale central tips. This plumage is probably attained by a body-moult early in year, but no birds from Jan. to March are available. *Winter*.—One adult (Dec.) is moulting remiges and wing-coverts and body-moult is nearly complete, while others from June to Sept. are moulting on body but not wings or tail. New feathers of neck are rounded and brown without straw-coloured median streaks, and there is no yellow-buff on feathers of



The Great Skua (*Stercorarius s. skua*).

concealed by coverts; primaries black-brown, white at base (on outer 5 feathers 30–60 mm. beyond coverts and making larger white patch on under-wing), in outer (2nd) primary outer web only white at extreme base which is almost concealed by coverts, four inner primaries and secondaries black-brown with concealed basal part of feathers white, shafts of primaries whitish-straw almost to tips and those of secondaries on basal two-thirds; primary-coverts black-brown; rest of wing-coverts as upper-parts but greater with only small rufous and pale central tips. This plumage is probably attained by a body-moult early in year, but no birds from Jan. to March are available. *Winter*.—One adult (Dec.) is moulting remiges and wing-coverts and body-moult is nearly complete, while others from June to Sept. are moulting on body but not wings or tail. New feathers of neck are rounded and brown without straw-coloured median streaks, and there is no yellow-buff on feathers of

throat and ear-coverts, otherwise plumage appears to be like summer.

Nestling.—Closely covered with soft down with silky hair-like tips. Upper-parts yellowish-brown or pinkish-brown, under-parts paler and greyish in centre.

Juvenile.—Whole upper-parts and wing-coverts brown-black, most feathers slightly tipped rufous to paler brown; sides of head brown-black; throat rather browner; rest of under-parts brown more or less mottled rufous; under wing-coverts and axillaries black-brown mostly slightly tipped pale brown to rufous; tail black, extreme concealed base white, tips when not worn very narrowly edged pale brown; primaries and secondaries as adult but white on outer primaries less extensive; feathers of neck normal not lanceolate as in adult summer.

First summer.—Apparently much like juvenile and judging by one example in full moult (Sept.) birds in second winter are also like juvenile. What appear to be second summer birds are more like adult but upper-parts more uniform and darker with narrow pale centres to the feathers and very little rufous, neck-feathers also darker and with narrower straw-coloured shaft-streaks, under-parts darker brown and less rufous and flanks more uniform. N.B.—Owing to want of material, especially moulting birds, it is impossible to trace the sequence of plumages satisfactorily.

Measurements and structure.—♂ wing 385–405 mm., tail: central 140–155, outer 10–25 shorter, tarsus 65–72, bill from feathers 47–55 (12 measured). ♀ wing 380–405 (one 415), bill 48–51. Primaries: 1st narrow, pointed and about three-fourths primary-coverts, 2nd longest, 3rd 5–10 mm. shorter, 4th 20–25 shorter, 5th 40–45 shorter; outer web of 2nd narrow. Outer secondaries shorter than 11th primary, tips fairly square, tips of rest sharply sloped off, innermost about as long as 7th primary. Tail rounded, 12 feathers, tips slightly rounded, central pair projecting, and tips rather more rounded. About one-fourth of tibia bare, tarsus somewhat compressed, toes rather long, hind one elevated, free and minute, but with large strong claw, three front ones connected by straight webs, claw of inner toe very strong and much curved, that of middle toe less curved and somewhat dilated, that of outer toe comparatively small. Bill very stout, broad at base, compressed at tip which in upper mandible is strongly decurved and projects considerably beyond under mandible, gonys gently sloped up, angle not prominent, basal half, or rather more, of upper mandible covered by a thin plate or saddle-like shield, partially covering oblong nostrils.

Soft parts.—Bill, legs and feet dull black, in juv. base of bill and tarsus greyer; iris dark brown.

CHARACTERS AND ALLIED FORMS.—Other forms inhabit southern hemisphere. Large size, comparatively short tail, and white patch on primaries distinguish this from other British Skuas.

FIELD-CHARACTERS.—Short tail combined with large size, heavy

build, and almost uniform brown colour, when seen at any distance, give this species a rather heavy, lumbering look as it flies low over the sea. At closer quarters white patch on wing (at bases of quills) is readily seen. When in pursuit of other birds or while defending its nest, the flight is much accelerated and becomes impressively swift and powerful. As a rule rather silent, but occasionally utters a deep "Gack, gack." (F.C.R.J.).

BREEDING-HABITS.—Breeds by preference in colonies, but not very close together, and sometimes one or two pairs may be met with far from any others. *Nest.*—Little more than a scantily lined depression in heather, moss or rough pasture. *Eggs.*—Normally 2, occasionally one, but 3 once recorded, usually pale olive-brown to umber-brown, but occasionally bluish-green, in ground-colour, blotched and spotted with dark umber-brown. Average of 100 eggs, 70.59×49.37 . Max.: 78.55×50.6 and 71.5×53.2 . Min.: 62×44.5 mm. *Breeding-season.*—Latter half May and early June. *Incubation.*—By both sexes in turn. Period 28–30 days (Hantzsch). Single brooded.

FOOD.—Subsists on food disgorged by Gulls and Terns, but also fishes for itself. At nesting ground herrings often found lying round nest. Has also been known to kill Herring-Gull, Kittiwake, Duck and Coot, and will feed on stranded fish and offal, such as carcasses of whales.

DISTRIBUTION.—*British Isles.*—Breeds in Shetlands and Orkneys. Much increased late years (breeds considerable numbers Foula and Hermaness, also breeds Noss, Fetlar, Hascosay, Burrafirch Voe, and probably elsewhere, also a few pairs in one of Orkneys since about 1914). Elsewhere winter-visitor (exceptional summer), seldom coming to land. Seen various months at sea off south-west Ireland; others obtained Dublin, Down, and Tipperary, and one seen Meath.

DISTRIBUTION.—*Abroad.*—Breeds in Iceland and Færoes. In winter southward in north Atlantic to about Gibraltar, fishing-grounds off Newfoundland and Nova Scotia, and even (casually) to Long Island. Casual in Mediterranean (Italy), and recorded from Madeira. Replaced by allied forms in southern oceans.

STERCORARIUS POMARINUS

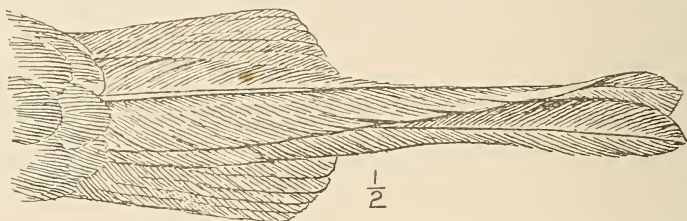
462. *Stercorarius pomarinus* (Temm.)—THE POMATORHINE SKUA.

LESTRIS POMARINUS Temminck, Man. d'Orn., p. 514 (1815—Arctic regions, Holland and France).

Stercorarius pomatorhinus (Temminck), Yarrell, III, p. 668; Saunders, p. 689.

DESCRIPTION.—*Adult male and female. Summer.—Pale form.*—Crown, nape, lores, base of lower mandible and under eye black forming well defined cap; sides and back of neck and ear-coverts straw-yellow (feathers rather pointed and somewhat stiffened in

centre of tip by rami lying parallel to shaft and closely united); some feathers of upper-mantle and some upper tail-coverts mottled or tipped white and sometimes some barred black and white (upper tail-coverts in adult with only occasionally one or two barred which are apparently unmoulted winter feathers); rest of upper-parts uniform black-brown; chin white; throat with some straw-yellow tips at sides of neck; upper-breast and flanks white, feathers barred or tipped brown-black forming a narrow band (usually wider in females) across fore-neck; lower-flanks, vent and under tail-coverts almost uniform black-brown but white bases of feathers often not entirely concealed and sometimes some feathers mottled and occasionally barred white; rest of breast and belly white; under wing-coverts and axillaries black-brown, bases of axillaries sometimes more or less white; tail brown-black, extreme concealed base white; primaries and secondaries brown-black, inner



Tail of the Pomatorhine Skua (*Stercorarius pomarinus*).

webs paler brown, bases white extending on inner webs of outer primaries beyond primary-coverts, shafts of outer 5 or 6 primaries straw-white; all wing-coverts uniform black-brown as upper-parts. *Dark form*.—Whole upper-parts uniform brown-black, but head blacker as well as back and sides of neck and ear-coverts and throat, feathers of which are glossy and pointed and occasionally tinged bronze; whole under-parts black-brown uniform or with some inconspicuous, very narrow, whitish fringes (all feathers of upper- and under-parts with white bases); tail and wings as pale form but rather blacker. This plumage is acquired by a complete body-moult Feb.—April, but wing-feathers, wing-coverts and tail appear to be moulted only once commencing sometimes Oct., usually Nov., and completing March or April. Body-moult to winter sometimes commences July but usually August, finishing Dec. or Jan., and is often not complete, varying number of summer feathers being retained. *Winter*.—*Pale form*.—New feathers on back and sides of neck, ear-coverts and throat barred brown-black and white and tips rounded not pointed and yellow as in summer; new feathers of crown browner than summer and with small whitish tips; new feathers of mantle and some scapulars tipped white or pale buff but some uniform; some upper and under tail-coverts broadly barred black-brown and white or tipped white, thus much like some immature birds but upper and under wing-coverts and axillaries

entirely uniform black-brown. *Dark form*.—No winter birds examined, but judging by examples commencing moult plumage is as summer, but none moulting neck-feathers examined.

Nestling.—Upper-parts pale brown, under-parts paler grey-brown. Only specimens examined were partially feathered but down is evidently similar to, but paler than, that of Arctic Skua.

Juvenile.—*Pale form*.—Upper-parts dark brown, feathers with rufous-buff to pale buff tips varying considerably in width in individuals; crown and neck usually with very narrow pale fringes but sometimes broad buff fringes; upper and under tail-coverts broadly barred dark brown and rufous-buff to pale buff and at bases white; whole under-parts brown barred, usually somewhat obscurely, buff, but sometimes more prominently buffish-white; under wing-coverts and axillaries broadly barred black-brown and white; tail brown-black usually with inconspicuous pale tips, concealed bases white but extending toward tips and mottled brown on inner webs of outer feathers; primaries brown-black paler on inner webs, bases white extending further towards tips on inner webs than in Arctic Skua, but not showing beyond coverts on outer webs, tips usually with very narrow pale brown to buff edging; secondaries as primaries and inner half with very narrow whitish edgings at tips, innermost with buff spot-like edgings; primary-coverts black-brown faintly tipped paler; wing-coverts as upper-parts but frequently outer greater and median almost uniform or with only very narrow paler tips. *Dark form*.—Like pale form but head, neck and throat usually without or with scarcely noticeable pale tips, pale tips on upper-parts and wing-coverts narrower and not so plentiful, under-parts less barred but upper and under tail-coverts, axillaries and under wing-coverts broadly barred as pale form.

First summer.—*Pale form*.—Upper-parts much as juvenile but feathers of back of neck with white spots or bars and some with yellow pointed tips; chin and sides of head white streaked or spotted brown or mostly brown with white spots; feathers of throat and breast white broadly tipped brown and usually barred buff; flanks, upper and under tail-coverts broadly barred white or buffish and dark brown; rest of breast and belly sometimes white but usually feathers more or less tipped or barred dark brown; under wing-coverts and axillaries as juvenile broadly barred black-brown and white; tail and wing-feathers as juvenile but without pale tips; wing-coverts much as juvenile but upper series of lesser often with conspicuous white tips. *Dark form*.—Upper- and under-parts and upper wing-coverts uniform brown, under wing-coverts, axillaries, upper and under tail-coverts and feathers of vent narrowly tipped buff, under tail-coverts and under-parts sometimes obscurely barred. The juvenile plumage is completely moulted Dec. to April or May.

Second winter.—*Pale form*.—Much as first summer but feathers of upper-mantle with more subterminal bars and those of back of neck barred and not with yellow tips. *Second summer*.—Body-plumage much same but feathers of upper-mantle tipped white not

barred and those of back and sides of neck with more yellow tips ; under wing-coverts and axillaries mostly brown usually with some whitish edgings and a few axillaries sometimes barred ; upper wing-coverts without pale tips except usually some lesser with white tips. *Dark form*.—Apparently as adult but browner, not so black and with shorter tail and occasionally obscurely barred on under-parts but sequence is very difficult to trace in dark form. Moults as adult except that tail sometimes starts Aug.

Third winter.—Much like adult but throat more barred and with very little or no yellow ; centre of under-parts often ticked dark brown ; flanks and tail-coverts more barred. *Third summer*.—As adult but with some white edgings to under wing-coverts and axillaries and often some barred black and white, lesser coverts at point of wing often edged white, under and upper tail-coverts and vent usually more mottled with white and often some barred ; sometimes chin and throat heavily streaked blackish. *Dark form*.—Like adult but under-parts, under wing-coverts and sometimes some upper tail-coverts narrowly tipped buff.

Measurements and structure.—♂ wing 348–375 mm., tail (ad.) central 190–225, outer 70–105 shorter, (juv.) central 130–152, outer 5–15 shorter, (1st summer) central about 25 longer than outer, (2nd summer) central 40–70 longer, tarsus 48–56, bill from feathers 36–40 (12 adults measured). ♀ wing 340–373, tail : (ad.) central 165–215, outer 50–95 shorter, bill 35–40. Primaries : 1st narrow and about two-thirds primary-coverts, 2nd longest, 3rd 5–15 mm. shorter, 4th 20–35 shorter, 5th 40–60 shorter. Elongated central tail-feathers usually twisted towards vertical in adults and 3rd summer birds but sometimes not twisted even in adults, tips rounded with obtuse point. Rest of structure as Great Skua.

Soft parts.—Bill yellowish-brown, tip black ; legs and feet (ad.) black with some grey on tarsus, (juv.) blue-grey with distal half of toes and webs black ; iris (ad.) black-brown, (juv.) whitish.

CHARACTERS.—No subspecies. Distinguished from other British Skuas by wing and bill being smaller than Great, larger than Arctic Skuas, no white showing beyond primary-coverts as in Great Skua, adult having rounded and usually twisted central tail-feathers.

BREEDING-HABITS.—Little definite information available : less sociable in habits than Great or Arctic Skuas, nests being placed considerable distances apart. *Nest*.—Depression in mossy tundra. *Eggs*.—Normally 2, olive or warm brown in ground-colour, blotched and spotted blackish-brown. Average of 19 well authenticated eggs, 64.06×44.8 . Max. : 72.6×44.9 and 71×47 . Min. : 57.2×43.6 and 66.1×41.5 mm. *Breeding-season*.—Second half June and early July. *Incubation*.—No reliable data. Single brooded.

FOOD.—Where Terns and Gulls are at hand will force them to disgorge food in flight. On breeding ground feeds largely on lemmings and will also capture fish and devour carrion, stranded fish,

etc. Has been seen to chase and kill a Phalarope, and is destructive to young birds and eggs of other species.

DISTRIBUTION.—*British Isles.*—Passage-migrant and winter-visitor. Tolerably regular autumn passage-migrant, especially east coast England, less regular east coast Scotland, and still scarcer south and west coasts Great Britain and coasts Ireland. Periodically great numbers (e.g. autumn, 1879, 1880, 1886, 1892, 1901 Great Britain, and Oct., 1862, Ireland). Sometimes stops winter, but rare on spring-passage except seas of O. Hebrides, where recorded as frequent in some years. Said to have bred but no proof. Sometimes inland.

DISTRIBUTION.—*Abroad.*—Arctic regions north of about 70°. Nesting proved Novaya Zemlia, islands and coast of Siberia, Greenland, Point Barrow in Alaska. In winter southwards to Australia, south-west Africa, New Jersey, California, Galapagos Islands, and Peru.

STERCORARIUS PARASITICUS *

463. *Stercorarius parasiticus* (L.)—THE ARCTIC SKUA.

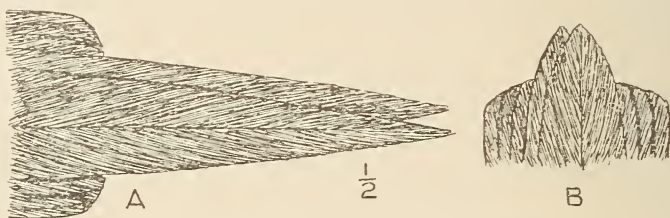
LARUS PARASITICUS Linnæus, Syst. Nat., ed. x, i, p. 136 (1758—Europe, America, Asia. Restricted typical locality : coast of Sweden).

Stercorarius crepidatus (Gmelin), Yarrell, III, p. 674 ; Saunders, p. 691.

DESCRIPTION.—*Adult male and female. Summer.*—*Dark form.*—Whole upper-parts dark umber-brown, but crown down to eyes and nape blacker forming ill-defined cap (all feathers with whitish bases) ; feathers of sides and back of neck slightly pointed and usually with central streaks of straw-yellow but sometimes these are absent ; cheeks and ear-coverts with varying amount of straw-yellow, sometimes none ; whole under-parts uniform sooty-brown with more or less greyish tinge (bases of feathers white). *Pale form.*—Upper-parts as dark form but blackish cap usually cut off by somewhat pointed, whitish-yellow feathers of ear-coverts and sides and back of neck forming a collar but this is often broken in centre by umber feathers with yellow tips ; under-parts white but sides of upper-breast, flanks and vent and under tail-coverts as well as lores and extending slightly under eyes greyish sooty-brown, and often a varying amount of pale brown across upper-breast and on throat and sometimes some on rest of under-parts ; tail in both forms blackish umber-brown, extreme (concealed) base white ; primaries and secondaries in both forms umber-brown, tips blackish, extreme (concealed) bases white but in pale form showing greyish-white beyond coverts on under-surface, shafts of two outer primaries

* Gray, Dresser, Saunders, and (following these authorities) other British and Continental ornithologists, have shifted the name *parasiticus* from this species to the Long-tailed Skua. In this case the change is not justifiable, as fully explained by Stejneger (*Proc. U.S. Nat. Museum*, v, pp. 40-42), whose view has now been generally accepted.—E.H.

(i.e. 2nd and 3rd) straw-white but that of 4th often clouded with brown especially in dark birds; primary-coverts black-brown; rest of upper and under wing-coverts and axillaries in both forms dark umber-brown. This plumage is acquired by complete body-moult Jan. to April, but wing-feathers, wing-coverts and tail appear to be moulted only once, commencing sometimes Oct., usually Nov. and completing March or April. Body-moult to winter commences sometimes Sept., but apparently usually takes place Nov.-Dec.—N.B. Very few adults moulting to winter or in winter plumage are available for examination. *Winter.*—*Pale form.*—New feathers of crown, especially sides and round eye, black-brown edged whitish; back and sides of neck streaked and barred to varying extent dark brown, tips sometimes rounded, sometimes pointed and yellow; lower-neck and upper-mantle barred dark brown and pale buff; feathers of mantle and scapulars dark brown



The Arctic Skua (*Stercorarius parasiticus*). Distal portion of tails of—A. Adult.
B. Juvenile.

marginated white; upper tail-coverts mostly broadly barred black-brown and white; chin spotted dark brown; lower-throat and upper-breast narrowly barred dark brown; flanks and under tail-coverts broadly barred black-brown and white. *Dark form.*—Feathers of neck often rounded and without yellow tips, those of upper-mantle often tipped rufous and some on under-parts obscurely barred pale buff, but apparently sometimes there is very little difference in winter and summer plumage.

Nestling (Plate 11).—Closely covered with soft down with silky hair-like tips. Rich umber-brown, paler and tinged greyish round eyes, at tips of wings, on chin and in centre of under-parts. Sometimes blackish-brown rather paler on under-parts. Down is replaced by juvenile feathers to tips of which it clings.

Juvenile.—Varying considerably. Head and back of neck brown-buff streaked black to uniform brown-black or sometimes with feathers lightly tipped rufous; mantle, scapulars and back black-brown, feathers with tips varying in width of buff to rufous and sometimes uniform black-brown with only a few inconspicuous tips on scapulars; upper tail-coverts black-brown with rufous edges at tips and sometimes broadly barred buff and black-brown; under-parts varying from uniform black-brown except for a few rufous tipped feathers on flanks and under tail-coverts to white heavily tipped and barred brown, intermediates being buff-brown

mottled or barred black-brown, lower flanks and under tail-coverts usually more prominently barred or tipped buff or rufous ; sides of head, chin and throat, in examples with lighter under-parts, usually streaked black-brown but occasionally uniform black-brown ; axillaries and under wing-coverts black-brown tipped rufous or buff and in lighter examples broadly barred brown and buff or whitish ; tail brown-black, concealed base white often tinged rufous, outer feathers with very narrow tips or spots at tips of buff ; primaries as adult but with conspicuous rufous or buff tips and white at base of outer primaries often showing (usually tinged rufous) beyond primary-coverts ; secondaries brown-black, innermost usually but not always tipped rufous or buff ; primary-coverts brown-black tipped rufous but often very lightly ; greater coverts black-brown usually edged and tipped rufous or buff but occasionally uniform ; median and lesser coverts as upper-parts but upper series of lesser broadly edged and tipped rufous-buff to buff. N.B.—Buff or rufous tips to feathers become much worn in winter.

First summer.—Much as juvenile but crown rather darker ; back of neck usually barred ; many feathers of mantle and scapulars tipped rufous or buff but some not ; tail-coverts, axillaries and under wing-coverts boldly barred ; under-parts barred varying in colour ; primaries and primary-coverts as adults without buff tips ; wing-coverts tipped buff. The juvenile plumage is completely moulted (including wings and tail) Nov. to March, and occasionally not finished as late as June.

Second winter and summer.—Moult as adult. *Dark form.*—Crown, back and sides of neck, upper-parts and throat much as adult, but even in summer, feathers of back of neck not always pointed and streaked yellow, some feathers especially on upper-mantle and lesser wing-coverts with rufous or buff tips ; breast and belly with more or less concealed broad bars and under tail-coverts, axillaries and under wing-coverts varying but usually boldly barred dark brown and buff. *Pale form.*—Back and sides of neck boldly barred and streaked brown and whitish or buff, or buff streaked brown ; feathers of mantle and scapulars tipped buff to whitish ; breast, flanks and under and upper tail-coverts boldly barred dark brown and white or pale buff, centre of breast and belly often white not barred ; axillaries and under wing-coverts of both forms usually boldly barred but sometimes only edged pale ; upper wing-coverts, especially lesser, with some buff tips.

Third winter and summer.—Like adults but even in summer with some pale tipped feathers here and there on upper-parts and often some barred on under-parts and white-breasted birds with some brown-tipped feathers and sometimes some barred upper tail-coverts and some under wing-coverts or axillaries with white edgings or tips.

Measurements and structure.—♂ wing 305–328 mm., tail : (ad.) central 175–215, outer 65–105 shorter, (juv.) central 118–140, outer 7–22 shorter, tarsus 42–45, bill from feathers 27–32 (14 adults

measured). ♀ wing 305–322, tail: (ad.) central 170–205, outer 55–85 shorter, (juv.) central 110–136, outer 10–18 shorter; bill 27–30. Primaries: 1st narrow and about two-thirds primary-coverts, 2nd longest, 3rd 5–15 mm. shorter, 4th 20–30 shorter, 5th 40–50 shorter; outer web of 2nd narrow. Tail as in Great Skua but central pair tapering to a point, except in juvenile which has these feathers abruptly pointed. Rest of structure as Great Skua but bill comparatively wide at base and tip not so abruptly decurved.

Soft parts.—Bill (ad.) blackish-brown, tip black, (juv.) bluish-grey, darker at tip; legs and feet (ad.) black, (juv.) bluish-grey with distal half of webs black; iris dark brown.

CHARACTERS.—Smaller than Pomatorhine and central tail-feathers at all ages more sharply pointed. For distinctions of Long-tailed Skua see under that species.

FIELD-CHARACTERS.—In size much inferior to Great Skua, but flight more graceful, though excelled in this respect by Long-tailed Skua. Dark colouring of upper surface, and in some birds of breast also, easy hawk-like flight and very characteristic wedge-shaped tail with two long straight projecting feathers quite different from very elongated pointed streamers of Long-tailed Skua or twisted tail-feathers of Pomatorhine, serve readily to identify adults. Cry is also quite different from those of Gulls, a wailing “Tee-ow, yee-ow,” but there is also a conversational “gack, gack.” Juveniles of the smaller Skuas are difficult to identify in the field. (F.C.R.J.)

BREEDING-HABITS.—Breeds in colonies on moorlands, tundra, and in far north on shingle. Some of these colonies are of considerable size, but isolated pairs may also be met with. *Nest*.—Little more than a neatly rounded depression in moss, grass or heather, sometimes lined with a little grass or roots of arctic willow. *Eggs*.—Normally 2, but occasionally 3, while 4 have once been recorded, greenish, olive or umber-brown, quite exceptionally light blue in ground, with spots and a blotch or two of dark umber-brown. Average of 100 eggs, 57.05×40.93 . Max.: 63.1×43.7 and 59×44.3 . Min.: 49×39.1 and 59.6×37.2 mm. *Breeding-season*.—End May and early June, but occasionally eggs may be found as late as July and even August in far north. *Incubation*.—By both sexes. Period 24 days (Faber) to 28 (?). Single brooded.

FOOD.—Obtains part of its food by pursuit of Terns and smaller Gulls: has been known to attack and kill lambs: will pursue and kill wounded birds, and has been seen to kill Purple Sandpiper and Lapland Bunting. Devours eggs of other birds freely (Eider Duck, Ringed Plover, Common Gull, etc.), and also nestlings (Red Grouse, etc.): also recorded as capturing fish, worms, insects, including coleoptera (*Elater*, *Harpalus*, etc.), diptera (*Tipula*), odonata, phryganeidæ (*Limnophilus*), crustacea and actiniæ. Saunders also includes mollusca and Turner says that it eats berries of *Empetrum nigrum*.

DISTRIBUTION. — *British Isles*. — Summer-resident and passage-migrant. Breeds many places Shetlands, a few Orkneys and I. and O. Hebrides, and very sparsely Caithness and Sutherland. Elsewhere passage-migrant chiefly autumn (Aug.–Oct.) in varying numbers; rare spring. Most regular east coast Great Britain, less frequent south and west coasts, and Ireland. Sometimes inland. Occasionally summer.

DISTRIBUTION. — *Abroad*. — Breeds Færoes, northern Scandinavia, north Russia, Jan Mayen, Franz-Josef Land, Spitsbergen, Novaya Zemlia, coasts of Siberia to Commander Islands, Alaska, arctic America and Greenland. In winter coasts of Europe and Africa south to Cape of Good Hope, in Asia, Persian Gulf and along coasts of eastern Asia to Australia, casual New Zealand and Chatham Islands, in America to California, casually to Peru and Brazil (a subspecies described from Australia (winter!) requires confirmation).

STERCORARIUS LONGICAUDUS

464. *Stercorarius longicaudus* Vieill. — THE LONG-TAILED SKUA.

STERCORARIUS LONGICAUDUS Vieillot, *Nouv. Diet. d'Hist. Nat.*, nouv. éd., xxxii, p. 157 (1819—Northern regions).

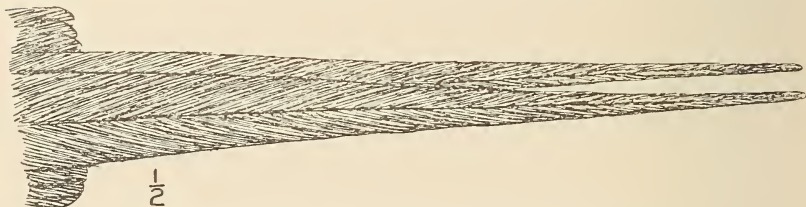
Stercorarius parasiticus (Linnæus), Yarrell, III, p. 680; Saunders, p. 693.

DESCRIPTION. — *Adult male and female. Summer*. — Fore-head, crown, nape and lores extending on to base of lower mandible and a line under eyes brown-black, fore-head rather browner (forming conspicuous cap); back and sides of neck, cheeks and often base of throat straw-yellow (feathers as well as black ones of lower nape slightly pointed); rest of upper-parts uniform grey-brown (considerably paler than Arctic Skua); chin, throat and breast white; sides of breast and rest of under-parts pale grey-brown, varying individually in extent, being sometimes confined to sides and abdomen and sometimes extending in rather paler shade over most of breast; axillaries and under wing-coverts uniform grey-brown as upper-parts; tail: base as upper-parts shading to blackish on distal portion; primaries brown-black on outer webs and tips, brown on inner webs and white at extreme concealed bases, shafts of 2nd and 3rd straw-white, but sometimes that of 3rd pale brown, rest brown; secondaries brown-black on distal part of outer webs and part of inner, otherwise grey-brown with white concealed bases; primary-coverts brown-black; rest of wing-coverts grey-brown. This plumage is acquired by complete moult apparently in early spring but no adults in spring are available for examination. Another moult takes place in autumn (Oct. seen and probably later) and involves all body-plumage but material is insufficient to decide when wings and tail commence to moult. *Winter*. — Crown brown-black, feathers very narrowly tipped dull white; feathers of back

of neck and upper-mantle same and tips rounded not pointed and yellow; feathers of mantle same but tips broader and whiter; upper tail-coverts broadly barred black and white; ear-coverts, sides of head and throat mottled and spotted with dark brown, feathers with rounded whitish tips and white bases not entirely concealed; upper-breast with broad band of dark brown and feathers of breast slightly fringed brown; lower-breast and belly white; flanks barred dark brown; under tail-coverts barred, spotted or streaked dark brown. N.B.—No fully moulted winter adult examined.

Nestling.—Much like that of Arctic Skua but apparently paler and more grey-brown and head and under-parts still greyer. N.B.—Only specimen examined of certain identification was partially feathered.

Juvenile.—Varying only slightly compared with juvenile Arctic Skua. Head dark brown, feathers edged grey-buff but occasionally uniform, back of neck usually more grey-buff streaked



Distal portion of tail of the Long-tailed Skua (*Stercorarius longicaudus*).

brown but sometimes as crown; mantle, scapulars and back black-brown, feathers tipped pale buff to grey-buff, usually more grey and not so rufous or yellowish as in Arctic Skua; upper tail-coverts broadly barred black-brown and grey-white or pale buff, but occasionally black-brown narrowly tipped buff; sides of head and throat streaked brown and grey-buff; upper-breast brown with white basal part of feathers not quite concealed; rest of under-parts whitish, heavily barred dark brown but sometimes barring confined to sides, flanks and under tail-coverts and feathers of breast and belly either white narrowly tipped brown or dark brown narrowly tipped buff; axillaries and under wing-coverts usually barred as flanks but occasionally uniform dark brown; tail as Arctic but usually less white at base and often (but not always) with small buffish-white tips; primaries as Arctic but white at base of outer not showing beyond primary-coverts and usually no pale tips but occasionally a very slight pale edging at tip but not conspicuous as in Arctic, shaft of 4th brown or pale brown; primary-coverts usually uniform, very rarely with slight buff edging at tip; wing-coverts as in Arctic but tips pale buff and lesser dark and not with such broad tips and edgings as in Arctic.

First summer.—Crown dark brown, feathers slightly edged and

tipped grey ; feathers of back and sides of neck with white bases and brown subterminal patches and mostly with yellow pointed tips ; rest of upper-parts black-brown, varying number of feathers narrowly tipped white ; upper tail-coverts barred black and white ; cheeks, ear-coverts and throat dull white speckled brown ; lower-throat and breast brown ; flanks, under tail-coverts, axillaries and under wing-coverts barred black and white ; centre of under-parts white ; wing-coverts very narrowly edged whitish, lesser coverts more broadly so. The juvenile plumage appears to be completely moulted in early spring.

Second summer.—Material is quite insufficient to make certain of the sequence but apparently bird is like first summer but neck and throat with more yellow and less brown, mantle more barred with white, under-parts white and flanks less barred.

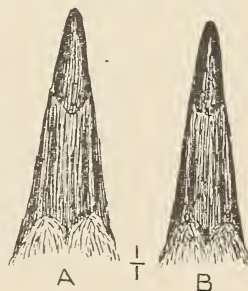
Third summer.—A mixture of plumage partly like adult winter and partly like adult summer but under wing-coverts and axillaries always considerably barred or edged with white. It is probable that some birds (judging by their tail-feathers) attain this plumage in second summer.

Fourth summer.—Like adult but with some barred or white-tipped under wing-coverts or axillaries, and usually with one or two winter-like barred or white-tipped upper or under tail-coverts.

Measurements and structure.—♂ wing 300–320 mm., tail : (ad.) central 275–355, outer 160–250 shorter, (juv. both sexes) central 118–135, outer 25–30 shorter, (1st summer) central about 70 longer than outer and tips tapering abruptly to long point, (3rd summer) central about 100–130 longer than outer and tips more gradually tapering, tarsus 35–44, bill from feathers 26–30 (15 adults measured). ♀ wing 290–320, tail : (ad.) central 275–330, outer 160–220 shorter ; bill 25–30. Primaries : 1st narrow and about two-thirds primary-coverts, 2nd longest, 3rd 10–20 mm. shorter, 4th 30–40 shorter, 5th 50–60 shorter. Tail as Arctic Skua but central pair in adult tapering more gradually to much prolonged point. Rest of structure as Arctic Skua but bill not so wide at base. Distance from feathers to end of shield often from 1–4 mm. shorter than from end of shield to tip of bill, while in Arctic Skua distance is usually same but often 1 mm. shorter or longer and this distinction is not invariable.

Soft parts.—Bill black ; legs and feet : (ad.) tarsus slate-grey, tibia, joints, toes and webs black, (juv.) only distal half of webs black ; iris dark brown.

CHARACTERS.—No subspecies. Smaller, narrower bill, very long tail-feathers, greyer upper-parts are distinguishing characters (see



Bills from above of—A. The Arctic Skua (*S. parasiticus*).
B. The Long-tailed Skua (*S. longicaudus*).

also description of juv. and 1st winter) ; shaft of 4th primary brown is not certain distinction as it is sometimes brownish in Arctic Skua.

FIELD-CHARACTERS.—Bears sufficient resemblance to Arctic and Pomatorhine Skuas to be recognizable as member of same genus. Is most graceful and easy flier of the three, while extremely elongated, flexible, middle tail-feathers of adult, much longer and finer than corresponding feathers of Arctic Skua, furnish ready means of identification. Pure white breast and buff chin are prominent when bird is at rest on ground, when neck is held slightly upright. Young in barred plumage can hardly be identified with certainty in the field. Has a loud wailing cry, and is very bold and demonstrative at nest. (F.C.R.J.)

BREEDING-HABITS.—Less sociable in breeding-habits than Great and Arctic Skuas. *Nest.*—A rounded hollow in mossy tundra. *Eggs.*—Normally 2, rarely 1 or 3, smaller and more elongated than those of Arctic Skua : greenish to olive-brown in ground (rarely pale blue) with a few dark brown spots or scrolls, chiefly at big end. Average of 73 eggs, 55.43×38.48 . Max. : 65.7×39.1 and 62.4×42.4 . Min. : 49×37 and 49.3×33 mm. *Breeding-season.*—Generally from latter part June onward, but occasionally in early June. *Incubation.*—Probably by both sexes ; male has been shot from eggs. Period 23 days (Manniche). Single brooded.

FOOD.—Occasionally pursues Gulls and Terns, but less frequently than other Skuas. Feeds largely on lemmings on breeding grounds : also recorded as taking field-mice, small birds, small fish (*Cottus gobio*, *Esox lucius*, *Gobio fluviatilis*), earthworms, insects, including coleoptera and larvæ, diptera, ephemeridæ, and orthoptera (*Forficula*), crustacea, eggs of ducks and other birds, carrion and some vegetable matter (leaves of Arctic willow and heather tips), while berries of *Empetrum nigrum* are largely eaten by young.

DISTRIBUTION.—*British Isles.*—Irregular autumn-migrant (Sept.–Oct.), occasional spring and summer. Most frequent (but decidedly scarce) east coast England, usually small numbers, occasionally many, as in 1879, rare south and west coasts (except 1891) and rare Scotland and Ireland. Occasionally inland.

DISTRIBUTION.—*Abroad.*—Breeds north Scandinavia, north Russia, Siberian tundras, once recorded Jan Mayen. In America, Greenland, Kotzebue Sound, Ellesmere Land, Grinnell Land, Lower Mackenzie River, Discovery Bay, and doubtless many other places. In winter south to Mediterranean, Japan, Florida, and 20° north latitude on west coast of America.

ORDER A L C Æ .

Seabirds (expert divers) with very short inner secondaries and axillaries, short rounded or wedge-shaped tails of 12 to 18 rectrices. Primaries 10, secondaries 15 to 19. Bills schizognathous and schizorhine, strong and short, not longer than about

length of head, more or less laterally compressed. Feet webbed, hind toe absent or rudimentary. In some species part of the horny coverings of bill are cast off after breeding season, thus greatly altering appearance of bill. Femur very short. Basipterygoid processes absent or indicated. Sternum with two pairs of incisions. Dorsal and ventral ribs rather long. One family with about 12 genera, all in northern regions of northern hemisphere. Eggs as a rule enormous in comparison with size of birds, in which they are only surpassed by Kiwis (*Apteryx*).

FAMILY ALCIDÆ.

Characters of Order *Alcæ*.

Key to genera of Order ALCÆ.

1	{	Wing under 135, bill under 25 mm.	Alle
	{	Wing over 135, bill over 25 mm.	2
2	{	Bill orange-red	Fratercula
	{	Bill black or bluish	3
3	{	Bill short, with cross-grooves and folds	Alca
	{	Bill elongated, without cross-grooves or folds	Uria

Genus ALCA L.

ALCA Linnaeus, Syst. Nat., Ed. x, i, p. 130 (1758—Type by subsequent designation and Linnean tautonymy: "*Alca*" = *Alca torda*).

Bill strongly laterally compressed, in adults with vertical grooves and folds, strongly decurved at tip, basal part feathered for nearly half its length. Nostrils slit-like, almost hidden in front of feathering. Tarsus shorter than middle toe with claw. Tail with 12 to 14 rectrices. 2 species. The Great Auk is often generically separated, because its wings being even smaller than those of *Alca torda*, were inadequate to support the large body and the bird was therefore unable to fly, but as the wings are developed and only much smaller in proportion, this is not a good generic character. Number of rectrices the same or 2 more—statements of 16 or 18 apparently wrong; individual variation of 12 and 14 occurs also in other *Alcæ*. If separated generically the name must be *Pinguinus*.

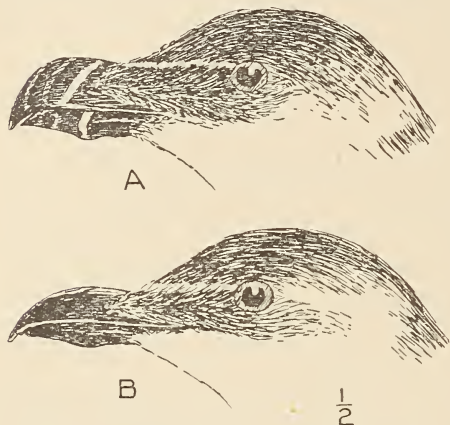
ALCA TORDA

465. *Alca torda* L.—THE RAZORBILL.

ALCA TORDA Linnaeus, Syst. Nat., ed. x, i, p. 130 (1758—"Habitat in Europæ borealis oceano." Restricted typical locality: Southern Sweden). *Alca torda* Linnaeus, Yarrell, iv, p. 55; Saunders, p. 695.

DESCRIPTION.—*Adult male and female. Winter.*—Head, back of neck and whole upper-parts black, slightly tinged brownish (back of neck occasionally mottled with white); lores as upper-parts; from base of culmen to centre of anterior edge of eye a thin and

obscured white line ; chin and throat extending behind eye and backwards on sides of neck white, but under eye dark brown and behind eye and along edge of back of neck mottled and speckled brown-black ; whole of rest of under-parts white but under wing-coverts covering base of primaries and secondaries grey-brown ; tail and wing-feathers black, but secondaries evenly and conspicuously tipped white ; all wing-coverts black as upper-parts.



The Razorbill (*Alca torda*). A. Adult winter.
B. 1st winter.

This plumage is acquired by complete moult Aug.—Oct. All primaries are moulted simultaneously followed by secondaries, greater coverts, primary-coverts and tail-feathers, all of which are moulted in series simultaneously and not singly or in pairs. *Summer*.—The body-feathers are again moulted March–April (occasionally May) but not wing-feathers, wing-coverts or tail. Whole upper-parts more glossy jet-black than in winter ; narrow white lines from base of culmen to eyes

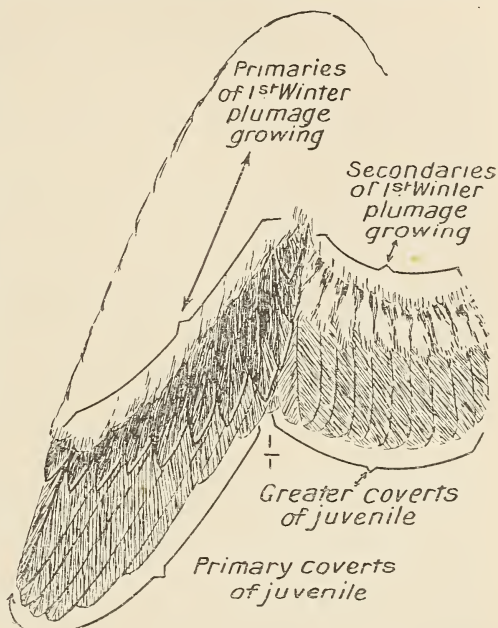
well-defined and conspicuous ; cheeks, ear-coverts, sides of neck joining black of upper-parts and chin and throat deep chocolate-brown (concealed bases of feathers of chin and throat white or whitish) ; whole under-parts extending in U-shape on centre of lower-throat white.

Nestling (Plate 11).—Covered with short down with short silky hair-like tips. Fore-head, lores, and crown white ; back of neck, chin, throat and sides of head mottled brown-black and white, bases of down being black and tips white ; mantle, wings and flanks brown-black speckled pale buff, down being lightly tipped pale buff ; rest of upper-parts brown-black sometimes with a few small buff tips ; whole of centre of under-parts white. Down is replaced by juvenile feathers (very loose in texture) to tips of which it clings.

Juvenile.—Upper-parts dark brown, feathers margined black-brown, white lines from culmen to eyes often conspicuous but sometimes scarcely noticeable ; chin and throat and sides of head usually deep brown but sometimes chin and centre of throat white dusted with brown at sides and sometimes whole chin and throat mottled brown and white ; rest of under-parts white ; wing-coverts as upper-parts ; tail, primaries and secondaries do not begin to grow until moult to next plumage commences, but primary-coverts and greater coverts give appearance of miniature wing-feathers.

First winter.—Like adult winter but white tips to secondaries rather narrower. The juvenile body-plumage and wing-coverts are moulted July–Oct., and at same time tail-feathers and primaries and secondaries grow. *First summer.*—Sometimes like adult except for narrower white tips to secondaries, sometimes throat mixed with white; wings and tail especially becoming very worn and pale brown by May and June.*

Measurements and structure.—♂ wing 185–202 mm., tail 71–84, tarsus 30–34, bill from feathers 30–35, greatest depth 21–23 (12 British measured). ♀ wing 185–200, bill length 29–34. First winter ♂ and ♀ wing 177–193, tail 60–75, bill length 26–31, depth 14–18. Primaries: 1st longest, 2nd 3–5 mm. shorter, 3rd 7–15 shorter, 4th 18–25 shorter, 5th 28–37 shorter; narrow and pointed. Outer secondaries shorter than 10th primary, inner ones about equal to 8th or 9th, tips rounded. Tail wedge-shaped, 12 feathers, pointed and narrow, central pair longest. Tibia feathered almost to joint and inserted far back; tarsus compressed; three toes (hind toe absent) fully webbed; claws curved and rather short, middle one dilated. Bill in adult much compressed, sides nearly flat with three well defined curved grooves on upper and two on lower mandible, ridge of upper mandible decurved in an arc to blunt pointed tip, under mandible sloped up from prominent angle but somewhat recurved at tip, proximal portion of bill covered with feathers except along gape where on each mandible is a prominent horny ridge. In first winter birds bill is very much smaller, much less arched, sides not grooved, and rictal ridge not prominent. In second winter bill is much more like adult but smaller, not so



Underside of wing of juvenile Razorbill (*A. torda*) showing primaries and secondaries commencing to grow under juvenile coverts, which from above have appearance of remiges.

underside of wing of juvenile Razorbill (*A. torda*) showing primaries and secondaries commencing to grow under juvenile coverts, which from above have appearance of remiges.

* It would appear that some individuals do not attain the brown throat in first summer, but no skins of such birds are available for examination.—H. F. W.

arched and with only one distinct groove, though often indication of a second. Nostril in adult very narrow slit in distal corner of feathered portion of culmen and almost concealed by feathers, in first winter wider and more exposed.

Soft parts.—Bill black with a curved line white in summer adult, greyer in winter adult, duller grey in second winter and absent in first winter and summer; legs and feet black; iris dark brown.

CHARACTERS.—No subspecies. Pointed tail-feathers, deep bill and white or whitish lines from culmen to eye distinguish it.

FIELD-CHARACTERS.—Essentially maritime, coming ashore only in breeding-season and then restricted to cliffs, expert swimmers and divers, short-winged, of robust build and with well marked colour patterns, Auks in haunts, habits and appearance constitute a well-marked group, whilst their pronounced specific differences make identification easy. Razorbill differs from Southern Guillemot in having black upper-parts, deep compressed bill marked by white transverse line and, in breeding season, line from its base to eye, a well-defined white wing-bar, and pointed tail which is elevated when swimming. Call a grunting croak; the young bird utters a mewling cry.

BREEDING-HABITS.—Breeds in colonies associated frequently with Guillemot on precipitous sea-cliffs, but lays its egg generally in crevice or hole, instead of on open ledge like Guillemot. Makes no nest. *Egg*.—One only, ovate rather than pyriform, surface rougher and more granular than Guillemot's, and less variation in colour, which ranges from light chocolate to white as a rule, but is occasionally greenish, blotched, spotted, speckled or zoned with rich vandyke brown ranging to black. Internal membrane shows greenish against light. Average of 110 eggs, 74.91×47.34 . Max.: 82.4×44.1 and 75.9×52.4 . Min.: 63.5×44.7 and 68.1×44 mm. *Breeding-season*.—First eggs usually laid about May 9 or 10 (exceptionally late in March!), and commonly after mid-May. *Incubation*.—By both sexes. Period variously estimated at 26 to 35 days; 30th day in incubator. Single brooded.

FOOD.—Chiefly small fish, generally sand-eels (*Ammodytes tobianus*), occasionally small smelts, herrings, sprats and *Gasterosteus*. Florence also records crustacea (Amphipoda).

DISTRIBUTION.—*British Isles*.—Resident. Breeds suitable cliffs (mainland and isles) throughout (doubtfully Dover cliffs). Less plentiful than Guillemot except in Ireland. Fairly generally distributed in seas autumn and winter (rare Irish seas winter) and frequently washed up on coasts, and occasionally storm-driven inland.

DISTRIBUTION.—*Abroad*.—Islands and coasts of North Atlantic, breeding as far south as Channel Islands and Brittany, and in America to Fundy Bay and Gulf of St. Lawrence. In winter south

to western Mediterranean to Malta and casual Adriatic, Moroccan coast to Mazagan, and casual Canary Islands (once Azores), in America to Long Island and casually to North Carolina. Recorded from Bear Island and Spitsbergen.

ALCA IMPENNIS

466. *Alca impennis* L.—THE GREAT AUK.

ALCA IMPENNIS Linnæus, Syst. Nat., ed. x, i, p. 130 (1758—Arctic Europe).

Alca impennis Linnæus, Yarrell, iv, p. 61; Saunders, p. 697.

DESCRIPTION.—*Adult male and female. Summer.*—Apparently moulted body-feathers as Razorbill. Large white patches roughly oval in shape in front of eyes each extending from near base of exposed culmen to about middle of orbit and to within 5 mm. of horny ridge along gape, divided on top of fore-head by black line about 12 mm. wide; rest of plumage like adult summer Razorbill but white tips to secondaries rather narrower and under wing-coverts hoary-brown and not white; white extending rather further up centre of throat and in a sharper V-shape rather than U-shape. *Winter.*—No specimen examined but chin and throat described as white as in winter Razorbill.

Measurements and structure.—Wing 160–178 mm., tail 83–95, tarsus 55–62, bill from feathers 85–90, greatest depth 44–46 (3 measured). Primaries: 1st longest, 2nd 2–5 mm. shorter, 3rd 8–15 shorter, 4th 18–22 shorter, 5th 27–32 shorter. Bill shaped much as in Razorbill but upper mandible not so arched, deep groove at base of exposed portion of upper mandible as in Razorbill but rest of proximal half smooth and flat, distal half with six or seven deep, narrow, grooves closely set and curved backwards on ridge of culmen, under mandible with no groove at base and distal part with nine or ten more or less straight grooves. Rest of structure as Razorbill but wing much reduced in size actually smaller than Razorbill's although bird itself twice as large, primaries extending only about 45 mm. beyond primary-coverts against 75 in Razorbill. Tail small but otherwise like that of Razorbill, wedge-shaped, 12 feathers, pointed and narrow, central pair longest.

Soft parts.—Bill, legs and feet black.

BREEDING-HABITS.—Formerly bred in colonies on shelving rocks and low-lying skerries and islands, making no nest. *Egg.*—One only, pyriform, probably ranging in colour from greenish or bluish to creamy-yellow or white, blotched and spotted or sometimes streaked with varying shades of dark brown to black. Average size of 36 eggs, 123.4×76.4 mm. Max.: 140×70 and 126.5×83.5 . Min.: 111×72.2 and 113.8×70.6 mm. *Breeding-season and Incubation.*—No reliable data.

FOOD.—Little definite recorded but Fabricius specifies *Cottus scorpio* and the lump-fish (*Cyclopterus lumpus*). Naumann adds *Clupea* sp. and W. Blasius includes crustacea (crabs, etc.).

DISTRIBUTION.—*British Isles*.—Extinct. Recorded in O. Hebrides as far back as 1684, but became rare early 1800. Only British taken specimens known are (1) Papa Westray (Orkneys) (the breeding-place was the Holm of Papa Westray, see *Ibis* 1898, p. 587) obtained by Bullock 1813, now in Brit. Mus.; (2) St. Kilda (O. Hebrides) captured alive and received by Fleming, Aug. 1821 or 2; (3) Waterford coast May, 1834, captured alive and now in Trin. Coll. Mus., Dublin. Strong evidence of one captured Stack-an-Armin (St. Kilda) about 1840, and fair evidence of one captured Farne Isles a few years previous to 1769. Remains have been found Orkneys, Caithness, Oronsay (Argyll), Durham, Antrim, Donegal, Clare, and Waterford.

DISTRIBUTION.—*Abroad*.—Formerly breeding round Newfoundland, and particularly on Funk Island, Iceland (Grimsey, Eldey, Geirfuglasker), Færoes, and possibly in east Greenland; in winter at least south to Ireland and Denmark, and to Carolina and Florida. *Extinct since 1844*. Eighty skins and seventy-five eggs are known to be in existence (E. Bidwell).

Genus URIA Briss.

URIA Brisson, Orn. I, p. 52 (1760—Type according to Brisson, Orn., VI, p. 70, "*uria*" = *U. aalge*).

Bill as long as head, little laterally compressed, straight, pointed, feathered to at least end of nostril, which is slit-like. Tail short, rounded, 12–14 rectrices. Tarsus a little shorter than middle toe with claw. 4 species and several subspecies, 3 in British waters.

- | | | | |
|---|---|--|---------------------------|
| 1 | { | Large white patch on wings | <i>U. grylle</i> , p. 802 |
| | | No large white patches on wings | 2 |
| 2 | { | Bill slenderer, feathering not quite to middle, entirely black | <i>U. aalge</i> , p. 796 |
| | | Bill stronger, feathering to middle, whitish yellow streak on edge of upper mandible | <i>U. lomvia</i> , p. 800 |

URIA AALGE.

467. *Uria aalge aalge* (Pontopp.).—THE NORTHERN GUILLEMOT.

COLYMBUS AALGE Pontoppidan, Danske Atlas, I, Pl. XXVI, and p. 621 (1763—Iceland and obviously also Denmark: "som og falder in Iceland, og der har det Navn." Terra typica Iceland). *Colymbus minor* Gmelin, Syst. Nat., I, 2, p. 585 (1789—Coasts of Great Britain, Ex Pennant, Brit. Zool., Birds, II, p. 437, Pl. 83: non-breeding birds described as darker than breeding ones, the name therefore not applicable to the southern form.)

DESCRIPTION.—*Adult male and female. Winter and summer and first winter*.—Like Southern Guillemot but whole upper-parts considerably blacker and in summer plumage chocolate colour of throat and head deeper, in winter black tips to feathers of lower-throat

often so extensive as to form a band ; streaks on flanks black and often broader and more conspicuous.

Nestling and Juvenile.—Like those of Southern Guillemot.

Measurements.—♂ wing 196 (one 192)–210 mm., tail 40–50, bill from feathers 42–52, depth at nostrils 13–17 (18 measured). ♀ wing 195–207.

BREEDING-HABITS.—Breeds in colonies, on ledges of steep sea-cliffs or on flat tops of stacks, in some places together with Brünnich's Guillemot, where ranges of two species overlap. *Egg*.—Variation much as in Southern Guillemot but much smaller series examined, and very bright red type not noted. Average size of 21 eggs from Bear Island, 85.56×51.91 . Max. : 100.6×52 and 88.4×54 . Min. : 79×51.5 and 81.2×47 mm. *Breeding-season*.—Begins early June in high north ; occasionally late May. *Incubation*.—By both sexes. Period about a month. Single brooded.

FOOD.—Chiefly small fish where found, but in northern limit of range almost entirely small crustacea and mollusca.

DISTRIBUTION.—*British Isles*.—From scanty material available appears to be the form breeding in Shetlands and Orkneys and possibly also St. Kilda and other Outer Hebrides. Occurs on all coasts winter and occasionally driven inland.

DISTRIBUTION.—*Abroad*.—Breeds Bear Island (south of Spitsbergen), probably Murman coast, coasts and islands of Norway, Gotland (Karlsöarne) (form breeding Heligoland and Bornholm uncertain), Færoes, Iceland, southern Greenland and Ungava south to Newfoundland and Magdalen Is. In winter in Atlantic south at all events to north Spain, and either this form or the next as far south as 30° north lat. and occasionally in western Mediterranean. In America to Maine. Replaced by *U. a. californica* in north Pacific Ocean.

468. *Uria aalge albionis* With.—THE SOUTHERN GUILLEMOT.

URIA AALGE ALBIONIS Witherby, Brit. Birds (Mag.), xvi, p. 324 (1923—England, type Yorkshire.)

DESCRIPTION.—*Adult male and female*. *Winter*.—Whole upper-parts dark mouse-grey, feathers of back of neck with white bases often showing more or less and sometimes forming a definite white (speckled with blackish) collar ; lores, under eyes and continued in a long narrowing stripe backwards through upper ear-coverts dark mouse-grey, intersecting white of cheeks and sides of head and upper-neck ;* under-parts white but feathers of throat (especially lower-throat) and sides of head joining upper-parts usually slightly tipped or margined blackish, giving a speckled appearance ; flanks

* This stripe is margined on its upper edge by a narrow groove or furrow in the feathers and in the "ringed" variety (*U. ringvia*) there is a very narrow white line along it, joining a narrow white ring round the orbit.—H.F.W.

streaked brown; axillaries brown tipped white; under wing-coverts mostly white, but greater ones hoary-brown and brown bases of others showing here and there especially along edge of wing; tail and primaries as upper-parts but inner webs of primaries pale brown becoming whitish basally; secondaries with conspicuous white tips; wing-coverts as upper-parts. This plumage is acquired by complete moult July-Nov., wing and tail-feathers being moulted as in Razorbill and lowest series of median also dropped together but rest of median and lesser coverts moulted normally. *Summer*.—The body-feathers are again moulted Dec. to March or even April but not wing-feathers, wing-coverts or tail. Head, neck and throat all round chocolate-brown but centre of top of head and back of neck blacker; in "ringed" variety white line round eye and along "furrow" very conspicuous; rest of plumage as winter.

Nestling (Plate 11).—Closely covered with down with fine hair-like tips, rather coarser and decidedly longer on head and neck, short on breast and belly. Head, neck and throat all round black closely streaked with white hair-like down, and on chin and sides of head somewhat spotted; rest of upper-parts sooty-brown, upper-mantle and wings mottled dull grey, down being tipped brownish-grey; under-parts below throat buffish-white. N.B.—Coarse white down on head and neck is composed of several filaments partially enclosed within a sheath.

Juvenile.—Upper-parts dark brown, feathers margined black-brown giving a somewhat squamated appearance, rest of plumage as adult winter but no brown streaks on flanks and all feathers of very loose structure. As in Razorbill tail-feathers, primaries and secondaries do not commence to grow until beginning of moult to next plumage but primary-coverts and greater coverts give appearance of miniature remiges.

First winter.—Like adult winter but more often with white showing across back of neck and usually less streaked on flanks, but difficult to distinguish except by rather smaller bill. The juvenile body-plumage and wing-coverts are moulted Aug.-Sept. and at same time primaries, secondaries and tail grow. *First summer*.—Moult of body later than in adult and continued often until May. Like adult summer but usually with some white feathers on chin and throat and wings and tail becoming pale brown by abrasion in May and June.*

Measurements and structure.—♂ wing 193–204 mm., tail 41–48, tarsus 33–37, bill from feathers 41–49, depth at nostrils 13–16 (12 British breeding birds measured). ♀ wing 191–203, bill length 42–45, depth 13–15. First winter ♂ and ♀ wing 180–193, bill length 37–45, depth 13–15. Primaries: 1st longest, 2nd 2–5 mm. shorter,

* I have seen live examples in May and June in very worn, pale brown winter plumage from which it would appear that first summer birds sometimes do not attain the brown throat but I have not had skins of such birds for examination.—H.F.W.

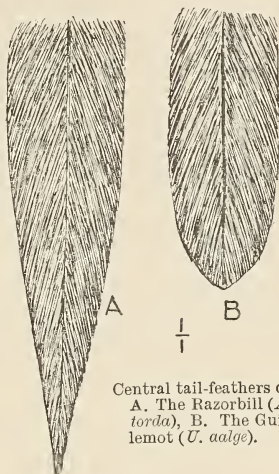
3rd 8-10 shorter, 4th 18-20 shorter, 5th 28-32 shorter. Outer secondaries 10-15 mm. shorter than 10th primary, inner ones about equal to 9th, tips rounded. Tail slightly rounded, 12 feathers, tips rounded. Bill compressed, culmen sloping gently to tip which is obtusely pointed, with a notch before tip, gonys long, sloping gradually upwards to tip in a slightly concave line, angle rather prominent; proximal portion of bill feathered except along gape where on each mandible is a narrow horny ridge. Rest of structure as in Razorbill.

Soft parts.—Bill black, inside mouth yellow; legs and feet ochreous but posterior portion of tarsus, joints of toes and webs brown-black; iris brown-black (juv. whitish).

CHARACTERS AND ALLIED FORMS.—For differences of *U. a. aalge* see under that form; *U. a. californica* (N. Pacific) is larger and has a longer, thicker bill. For differences of Brünnich's Guillemot see under that species. Compressed, tapering bill, "furrow" behind eye, black stripe on side of head in winter distinguish it.

FIELD-CHARACTERS.—Usually associated with Razorbill at breeding stations; like it rides high in the water, flies with rapidly whirring, narrow wings close to surface and, at times, in strings, but is rather larger, of more slender build, has pointed black bill, brown upper-parts and only obscure wing-bar. The note which has been rendered "murre" and "aaar," comes from the packed nesting ledges as a continuous rumbling growl.

BREEDING-HABITS.—Breeds in colonies, often of vast extent, in companionship with other species such as Razorbill, Kittiwake, Puffin, etc., and lays on ledges of perpendicular sea-cliffs, or on top of isolated stacks. No nest: egg laid on bare rock. *Egg.*—One only, pyriform, yellowish when viewed from inside except when overpowered by green of outer colouring. Variation in colour and markings extraordinary; deep blue-green, bright reddish, warm ochreous, pale bluish, creamy and white types may be met with, marked richly or sparingly with blotches, spots, zones or intricate patterns of interlacing lines which vary in colour from light yellowish brown to bright red, rich brown or black; sometimes quite unmarked. Average size of 90 eggs from Great Britain, 83.03×50.39 . Max.: 92.7×50.1 and 85.7×52.2 . Min.: 72.5×50 and 84.1×43.8 mm. *Breeding-season.*—Begins about third week May and generally end of month. *Incubation.*—By both sexes. Period 30, 31, 33 days.



Central tail-feathers of
A. The Razorbill (*A. torda*), B. The Guillemot (*U. aalge*).

(Evans); 28-30 days (Nelson); 32 days (Paynter). Single brooded.

FOOD.—Chiefly small fish, such as sand-eels (*Ammodytes tobianus*), but information scanty; occasionally smaller crustacea and mollusca.

DISTRIBUTION.—*British Isles*.—Resident. Breeds suitable cliffs. More plentiful than Razorbill, except in Ireland. Fairly generally distributed in seas autumn and winter (scarce Irish seas winter), and frequently washed up on coasts and occasionally storm-driven inland. Birds breeding in Orkneys and Shetlands and probably St. Kilda (? other Outer Hebrides) appear to be of the northern form.

DISTRIBUTION.—*Abroad*.—Probably this form formerly breeding Alderney, at least 1903 on Sark, south to north-west coast France and Berlengas Is. (off Lisbon) but no breeding birds from these localities have been examined.

URIA LOMVIA

469. *Uria lomvia lomvia* (L.)—BRÜNNICH'S GUILLEMOT.

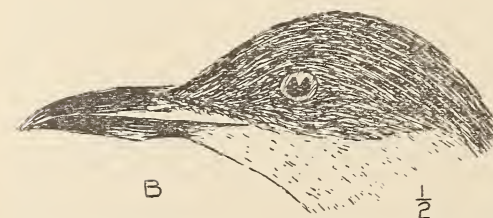
ALCA LOMVIA Linnæus, Syst. Nat., ed. x, i, p. 130 (1758—N. Europe. Restricted typical locality Greenland, from Linnæus's last but most definite quotation: Albin, pl. 84).

Uria bruennichi Sabine, Yarrell, iv, p. 76; Saunders, p. 701.

DESCRIPTION.—*Adult male and female*. *Winter*.—Upper-parts jet-black with slight dark greyish tinge; black of crown extending



A



B

$\frac{1}{2}$

A. The Northern Guillemot (*Uria a. aalge*), adult, winter.

B. Brünnich's Guillemot (*U. l. lomvia*), adult, winter.

under and behind eyes and upper ear-coverts and on to base of under mandible and extreme apex of chin (thus no dark stripe through ear-coverts with white above it as in Common Guillemot); feathers of lower ear-coverts and sides of throat tipped black and sometimes similar feathers across lower-throat forming more or less of a band; flanks finely streaked dark brown; axillaries brown and white; under wing-coverts white with brown bases showing here and there and along edge of wing, greater under-coverts grey-brown; tail brown-black; wing-feathers as Common Guillemot with longish white tips to secondaries. This plumage is acquired by complete moult

as in Common Guillemot in autumn. N.B.—Only one in full moult (Aug.) examined. (Ringed “variety” does not occur in this species.) *Summer*.—Body-moult apparently as in Common Guillemot but no moulting examples available. Upper-parts black with dark greyish tinge especially marked on fore-head, crown, back of neck and upper-mantle; chin, lores, sides of head to lower edge of eye, sides of neck and throat dark chocolate-brown slightly paler than in Razorbill.

Nestling.—Like that of Common Guillemot, but white streaks on crown and neck more prominent, and upper-parts with tips of down rather more buffish-brown.

Juvenile.—Head and throat all round black or with chin and throat dull white, feathers tipped black-brown; whole upper-parts brown-black, feathers of upper-parts and wing-coverts margined jet-black giving a somewhat squamated appearance; under-parts white, some feathers of sides and flanks with very narrow blackish margins at tips. As in Common Guillemot and Razorbill tail, primaries and secondaries do not grow with juvenile plumage.

First winter.—Like adult except for smaller bill and sometimes more black-brown tips to feathers of throat. *First summer*.—Throat appears to be frequently mottled with white, and upper-parts, and especially wings, become brown about June.

Measurements and structure.—♂ and ♀ wing 205–226 mm., tail 43–51, tarsus 35–39, bill from feathers 32–39, greatest depth 13–17 (15 measured). First winter ♂ and ♀ wing 195–211, tail 40–45, bill length, 25–31, depth 11–13. Primaries: 1st longest, 2nd 2–5 mm. shorter, 3rd 8–14 shorter, 4th 18–25 shorter, 5th 28–38 shorter. Bill shorter, deeper and wider and more sharply decurved than in Common Guillemot, angle of gonys more prominent, horny ridge along gape wider and much more prominent, noticeable even in nestling. Otherwise structure as Guillemot.

Soft parts.—Bill black, horny margin of feathered portion blue-slate; legs and feet anteriorly yellowish-horn with dark joints, posteriorly black; iris brown-black.

CHARACTERS AND ALLIED FORM.—*U. l. arra* (Bering Sea) is larger. Distinguished from Razorbill by shape of bill and absence of vertical grooves and from Common Guillemot by prominent horny ridge from nostril to gape and also by its deeper, shorter bill and in winter by absence of black streak through ear-coverts.

FIELD-CHARACTERS.—In summer resembles Common Guillemot closely and associates freely with it, but can be distinguished at fairly close range by decidedly shorter, stouter and thicker bill. When at rest a prominent and distinctive character is the bluish-white line along edge of upper mandible, and on land alternating bands of yellow and black on feet can be distinguished with binoculars. In flight lower surface appears pure white with no sign of striation on flanks. Notes similar to those of Common Guillemot. (F.C.R.J.)

BREEDING-HABITS.—Breeds in vast colonies on ledges of precipitous cliffs and on flat tops of stacks, often crowded together as closely as possible owing to insufficiency of suitable sites. No nest, egg being laid on bare rock. *Egg*.—One only, pyriform, ranging in colour from blue-green to creamy or white, and blotched, spotted and streaked with blackish, yellowish or reddish-brown and lilac shell-marks. Type with red-brown markings undoubtedly occurs but is apparently rarer than in Common Guillemot. Average of 104 eggs 80.15×50.04 . Max.: 89.5×49.4 and 80×55 . Min.: 71.6×49.6 and 77×46.1 mm. *Breeding-season*.—From early June onward; laying general by mid-June. *Incubation*.—By both sexes. Period estimated at 30–35 days. Single brooded.

FOOD.—Smaller crustacea, such as Amphipoda (*Gammaridæ*) Copepoda, etc., mollusca, small fish and Annelida (*Hippolyte*) also recorded.

DISTRIBUTION.—*Great Britain*.—Rare vagrant. Male Scarborough, Dec. 7, 1894, male and female Filey (and others reported), Jan., 1895, one near Flamborough Hd., Nov., 1899, one off Scarborough, Oct. 28, 1902, and probably one or two others previous to 1894 (*Birds Yorks.*, pp. 724–5). One reported seen Bempton Cliffs (Yorks.), June 27, 1909 (*Brit. B.*, III, p. 91). One Cambs., Jan. 12, 1895 (Saunders, p. 701). One near Farne Isles winter 1883–4 (G. Bolam, *Birds of Northumb.*, p. 664). One reported seen Farne Isles (Northumberland), June 14, 1908 (*Brit. B.*, II, p. 331). Female, Craigielaw Pt. (Haddington), Dec. 11, 1908 (*Ann. Scot. Nat. Hist.*, 1909, p. 75). Others possible Caithness and Suffolk.

DISTRIBUTION.—*Abroad*.—Coasts and islands of western Siberia to (at least) Taimyr Peninsula, Novaya Zemlia, Franz-Josef Land. Spitsbergen, Bear I., Iceland, Jan Mayen, northern Greenland, west to Hudson Bay and Gulf of St. Lawrence, coast of Labrador. Only partial migrant, south to English Channel, casual to coast of Sweden and west Prussia and exceptionally inland (Russia, north France); in America to Maine, casual south Carolina, Ohio, Indiana and Iowa. Replaced by *U. l. arra* in N. Pacific and on eastern coast of Siberia.

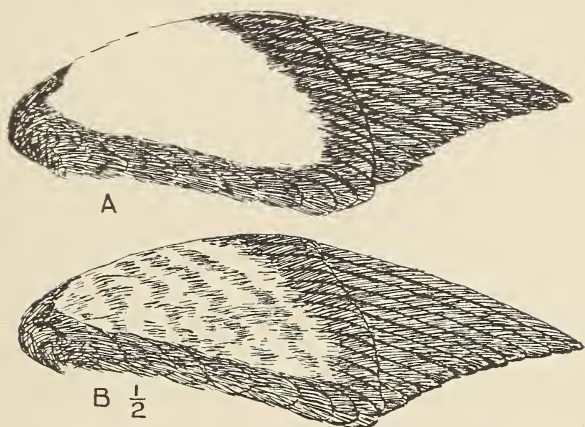
URIA GRYLLE

470. *Uria grylle grylle* (L.)—THE BLACK GUILLEMOT.

ALCA GRYLLE Linnaeus, Syst. Nat., ed. x; i, p. 130 (1758—European, Arctic Ocean. Restr. typ. loc. Sweden, from first quotation).
Uria grylle (Linnaeus), Yarrell, iv, p. 81; Saunders, p. 703.

DESCRIPTION.—*Adult male and female*. *Winter*.—Fore-head, lores and crown black, feathers with long white fringes mostly obscuring black especially on sides; back and sides of neck same, but basal part of feathers brown; in front of and under eye and sometimes behind eye patch of uniform black; mantle, scapulars, back and upper tail-coverts black, feathers narrowly margined white; rump.

with much wider white tips often entirely obscuring black (white fringes vary in width and rarely are almost absent from mantle, and usually absent from longest upper tail-coverts); under-parts white but dark brown bases of feathers of base of throat, sides of breast and flanks not entirely concealed; axillaries white and most of under wing-coverts but those round edge of wing black-brown; tail black; primaries and secondaries with outer webs and tips black, inner webs brown with basal inner part white; primary-coverts, coverts along edge of wing, lesser coverts and innermost median and greater black, rest of median and greater white forming large patch in middle of wing. This plumage is acquired by complete moult beginning sometimes July and occasionally not complete Dec. Primaries, secondaries, tail, primary-coverts, greater coverts



Wings of the Black Guillemot (*Uria g. grylle*). A. Adult. B. First winter.

and two lower series of median coverts are moulted, as in other "Auks," in series simultaneously, primaries and secondaries usually first and tail usually last. *Summer*.—The body-feathers are again moulted Jan.–March (occasionally Dec. and April), whole head and body brown-black, browner on under-parts, all glossed greenish when fresh but becoming duller and browner by wear; wings and tail as winter.

Nestling (Plate 11).—Closely covered with soft down with silky tips. Uniform rich black-brown, paler shade on under-parts. Down is replaced by juvenile feathers to tips of which it clings.

Juvenile.—Upper-parts browner than adult winter and with less white, centre of fore-head and crown, mantle, back and upper tail-coverts being uniform black-brown, sides of head, back of neck, scapulars and usually rump narrowly fringed dull white giving a speckled appearance; whole under-parts white with sides of head, most of throat, upper-breast, sides and flanks much speckled brown-black, centre of breast and belly sometimes speckled, sometimes

uniform white ; axillaries and under wing-coverts white but usually with narrow brown tips ; tail and wing as adult but browner and white wing-coverts with black-brown tips making wing-patch mottled. Tail-feathers, primaries and secondaries grow with rest of juvenile plumage and not with first winter as in Razorbill and Guillemot and feathers are not of such loose structure as in those species.

First winter.—Much like adult winter but white tips to feathers of mantle narrower and with usually some retained juvenile feathers especially scapulars ; under-parts usually with good many retained juvenile feathers with speckled tips on sides and vent ; wing and tail-feathers and wing-coverts as juvenile. The juvenile body-plumage is moulted (varying number of feathers being retained) Sept. (sometimes Aug.) to Dec., but not wing or tail-feathers nor wing-coverts. *First summer*.—Body-moult as in adult but rather later and sometimes still moulting in May. Sometimes body-plumage like adult but rather browner and less glossy, sometimes good many white or partially white feathers on under-parts ; tail and wing-feathers brown and abraded and wing-coverts tipped brown as in juvenile.

Measurements and structure.—♂ wing 156–169 mm., tail 44–51, tarsus 29–33, bill from feathers 29–35 (12 British measured). ♀ wing 154–165, bill 29–34. Primaries : 1st longest, 2nd 2–4 mm. shorter, 3rd 5–8 shorter, 4th 10–15 shorter, 5th 18–22 shorter. Rest of structure as in Common Guillemot, but occasionally 14 tail-feathers, no “furrow” behind eye, gonys short, bill not feathered so far forward, nostril mostly exposed in a deep groove.

Soft parts.—Bill black, inside mouth vermilion (orange in juvenile and 1st winter) ; legs and feet bright coral-red (reddish-brown in juvenile and 1st winter) ; iris brown.

CHARACTERS AND ALLIED FORM.—*U. g. mandtii* (Circumpolar Seas) has finer bill and in juvenile and first winter and summer secondaries have some white at tips. Large white wing-patch distinguishes Black Guillemot from other British “Auks.”

FIELD-CHARACTERS.—Adult in summer is unmistakable. Black plumage is accentuated by a large and conspicuous white wing-patch, vermilion feet and inside of mouth ; latter visible when bird utters its thin whistling cry. Plumage of adults in winter and of young, white below and mottled black and white above, is hardly less distinctive.

BREEDING-HABITS.—Breeds socially to some extent, several pairs often nesting not far apart, but not so markedly as other *Alcæ*. No nest but eggs deposited on rock in crevice of cliff, in hollow among loose boulders or even in walls. *Eggs*.—Two normally, while 3 have been met with occasionally but rarely ; white, often with a tinge of bluish-green, spotted or blotched with blackish-brown and ash-grey. Average of 80 eggs, 58.6×39.74 . Max. : 66.3×38.6 and 58×42.2 . Min. : 51.2×37.3 and 56.9×32.2 mm. *Breeding*—

season.—Seldom before latter part of May and early June. *Incubation*.—By both sexes. Period: 21 days (A. C. Bent), but other authorities give $3\frac{1}{2}$ to 4 weeks. Single brooded.

Food.—Crustacea (including *Pagurus*, Crangon, etc.), mollusca, univalves and bivalves (*Mytilus*, etc.), small fish, and occasionally accidentally drowned insects (*Tipulidæ*).

DISTRIBUTION.—*British Isles*.—Breeds sparsely Isle of Man, and a few places between Solway and Firth of Lorne, northwards more abundantly, but especially in some I. and most O. Hebrides, Orkneys and Shetlands, fairly commonly north coast Sutherland and north-east coast Caithness, but not now southwards on east side. Fairly frequent Ireland except east coast, where few. Used to nest a few places east coast Scotland, Flamborough (Yorks), Orme's Head (N. Wales). Outside present breeding area only occasional visitor and especially rare in south.

DISTRIBUTION.—*Abroad*.—Coasts of north Europe eastwards to White Sea, Færoes, Iceland, south Greenland, eastern North America from Ungava to Labrador and Maine. In winter to north of France and casual Germany, and in America from Cumberland Sound to Cape Cod and casually to New Jersey. Replaced in circumpolar seas (Novaya Zemlia, Spitsbergen, Franz-Josef Land, north Greenland and arctic America) by an allied form.

Genus ALLE Link.

ALLE Link, Besch. Nat. Samml. Univers. Rostock, I, p. 17 (1806—Type by tautonymy *A. alle*).

Smallest European form of family, about as large as Dabchick, bill short, shorter than head, upper mandible broader than high at base, culmen strongly arched. Nostrils round, free in front of feathering. Feathering on lower mandible forward to 4 to 5 mm. from tip. Rectrices 12. Tarsus little shorter than middle toe with claw. 1 species.

ALLE ALLE

471. Alle alle (L.)—THE LITTLE AUK.

ALCA ALLE Linnæus, Syst. Nat., ed. x, i, p. 131 (1758—"Habitat in Europæ, Americæ arcticæ oceano." Restricted typical locality Greenland, from first quotation and figure quoted "*Columba groenlandica*," Albin, pl. 85).

Mergulus alle (Linnæus), Yarrell, iv, p. 85; Saunders, p. 705.

DESCRIPTION.—*Adult male and female*. *Winter*.—Upper-parts glossy-black, narrow band at back of neck speckled white (varying and often in adults not continued right across, feathers have varying amount of white subterminally and black tips); scapulars edged white forming narrow white lines; small white spot above

eye; apex of chin, lores, under eye and anterior part of ear-coverts brown-black; rest of sides of head and neck white more or less freckled brown-black; under-parts white, but lower-throat and upper-breast more or less mottled brown, only tips of feathers being white; flanks streaked black, feathers having most of inner web black; axillaries brown; under wing-coverts pale brown, usually more or less mottled dull white; tail-feathers black, outermost



The Little Auk (*Alca alle*). Adult, winter.

usually, and occasionally other feathers, with white edging varying in size at tip, but sometimes without; primaries with brown-black outer webs and tips and brown (pale at base) inner webs; secondaries with brown-black outer webs, white tips and pale brown inner webs; all

wing-coverts glossy-black as upper-parts. This plumage is acquired by complete moult apparently Sept.-Oct. but no moulting examples available. *Summer*.—The body-feathers are again moulted in spring (only one moulting examined, viz. March). Like winter but no white showing on back of neck; lores, under eyes, sides of head and neck and whole chin and throat extending on to upper-breast deep chocolate-brown.

Nestling.—Closely covered with longish soft down with silky tips. Upper-parts, wings and throat uniform brown-black; under-parts paler dark brown, greyish in centre.

Juvenile.—Like adult summer but upper-parts browner and feathers margined blackish, throat paler brown, white spot over eye very small. Tail-feathers, primaries and secondaries grow with rest of juvenile plumage.

First winter.—Like adult and often not possible to distinguish but usually upper-parts rather browner and not so glossy-black as adult and wings and tail especially browner, speckled white band across back of neck usually more marked. No moulting examples examined but apparently only juvenile body-feathers are moulted and not tail, wing-feathers or wing-coverts.

Measurements and structure.—♂ wing 118–129 mm. (1st winter 112–122), tail 32–38, tarsus 19–21, bill from feathers 14–16 (12 measured). ♀ wing 115–128, bill 13–15. Primaries: 1st longest, 2nd 2–3 mm. shorter, 3rd 5–8 shorter, 4th 10–15 shorter, 5th 17–22 shorter; narrow and pointed. Outer secondaries shorter than 10th primary, inner between 8th and 9th, tips rounded. Tail slightly rounded, 12 feathers, tips sharply rounded. Tibia feathered almost to joint and inserted far back; tarsus compressed; three toes (hind toe absent), slender, fully webbed; claws slender, curved, sharp, middle one dilated. Bill stout, broad at base, culmen

curved, tip rather blunt, both mandibles notched before tip, gonys very short. Nostrils oval with well marked operculum.

Soft parts.—Bill black; legs and feet brown to slate-grey, webs and joints black; iris black.

CHARACTERS.—No subspecies. Distinguished by small size, white margins to scapulars and short, stout bill.

FIELD-CHARACTERS.—Very sociable in habits, and at its breeding-haunts usually met with in flocks, which go through innumerable evolutions with wonderful unanimity. Cry a frequently uttered ringing succession of laughing notes uttered in chorus on the wing. Flight very rapid, and bird rises with ease directly from surface of water. Small size and short bill, giving a finch-like expression which is borne out by its sprightly demeanour, distinguish it from other Atlantic *Alcæ*. When on land sometimes rests on tarsus, but not always. (F.C.R.J.)

BREEDING-HABITS.—Breeds in colonies, sometimes of enormous extent and generally but not always at considerable height, often on sea-cliffs, but also at some distance inland, and either in fissures and crevices of rocks or among talus of heaped-up boulders. No nest is made, but egg is generally about arm's length from entrance. *Egg*.—One only, pale blue in colour, usually unmarked but occasionally with a few yellowish-brown spots or interlacing streaks at big end. Average of 140 eggs, 48.09×33.75 . Max.: 53×33.5 and 50.7×36.7 . Min.: 45×32.5 and 50×30 mm. *Breeding-season*.—From mid-June onward. *Incubation*.—By both sexes. Period given as 24 days (Hantzsch). Single brooded.

FOOD.—In its breeding-grounds almost entirely small crustacea and plankton organisms, such as Amphipoda (especially *Gammaridæ*), Schizopoda (*Euphausia*, *Mysis*), etc. During winter months small fish also occasionally taken.

DISTRIBUTION.—*British Isles*.—Irregular winter-visitor (mid-Oct. to mid-March, most numerous Nov. to mid-Feb.; early dates 2nd week July, 1846, Norfolk, 15th, 1872, Norfolk, Aug. 5th, 1886, O.H., 30th, 1913, co. Donegal; late dates April 25, 1911, Wigtown, May 8th, 1899, N. Unst, 22nd, 1846, Ulster, 24th, 1918, Derby, 25th, 1857, Norfolk, June 24th, 1893, O.H.). Most frequent Scotland and east coast England, but occurs all coasts, often being driven on shore and inland. Occasionally in great numbers as Jan., 1895, Feb. and Mar., 1900, Nov., 1910, and Jan. and Feb., 1912.

DISTRIBUTION.—*Abroad*.—Arctic Ocean, from Novaya Zemlia and Franz-Josef Land, Spitsbergen, Jan Mayen, Iceland (Grimsey) to Greenland, Baffin Bay, Smith Sound and Kane Basin. In winter south to Azores and Canary Islands, exceptional Mediterranean; in America to Long Island, New Jersey and Carolina, casually and accidentally to Bermudas and other parts of N. America.

Genus FRATERCULA Briss.

Fratercula Brisson, Orn., I, p. 52 (1760—Monotype: "*fratercula*" = *Fratercula arctica*, cf. Orn., VI, p. 81, pl. VI, Fig. 2).

Remarkable on account of its extraordinary red or orange bill, which is knife-like, laterally compressed, strongly decurved in its whole length, and with strong folds. At angle of mouth a curious rosette which together with rugose fold at base of upper mandible and horny covering of base of bill, falls off in late summer, and so does the leathery piece below and appendage above eye. Feet red, claws strong and curved. Nostril a narrow slit near base and cutting edge of upper mandible. 2 species, European one consisting of several subspecies.

FRATERCULA ARCTICA

472. *Fratercula arctica grabæ* (Brehm.)—THE SOUTHERN PUFFIN.

MORMON GRABÆ Brehm, Handb. Naturg. Vög. Deutschl., p. 999 (1831—Færoes and "other neighbouring Is.").

Fratercula arctica (Linnæus), Yarrell, IV, p. 90; Saunders, p. 707.

Fratercula arctica arctica (L.), Hand-List (1912), p. 208.

DESCRIPTION.—*Adult male and female. Winter*.—Fore-head, crown and nape grey-black, at base of back of neck a narrow, ill-defined greyer line; rest of upper-parts black, feathers often tipped greyish; lores and round anterior part of eye as well as ill-defined streak on each side of chin and throat dusky-black, feathers being tipped blackish; rest of upper-throat and sides of head extending over eye to sides of crown and sides of nape ash-grey; black of upper-parts extending forwards at base of neck and forming complete black collar, wide at sides somewhat narrower in centre of throat, where it is tinged grey; rest of under-parts white but flanks and axillaries dark brown; under wing-coverts hoary-brown; tail and wing-feathers black, inner webs of latter brown; all wing-coverts black. The body-plumage and lesser and median wing-coverts are moulted Aug.—Sept but not wing and tail-feathers. *Summer*.—Very few in moult examined but one was undergoing a complete moult in Feb., all primaries, secondaries, primary-coverts and greater coverts and tail-feathers growing together. Like winter but lores and round eyes ash-grey as rest of sides of head which are rather paler than in winter; point of fore-head ashy.

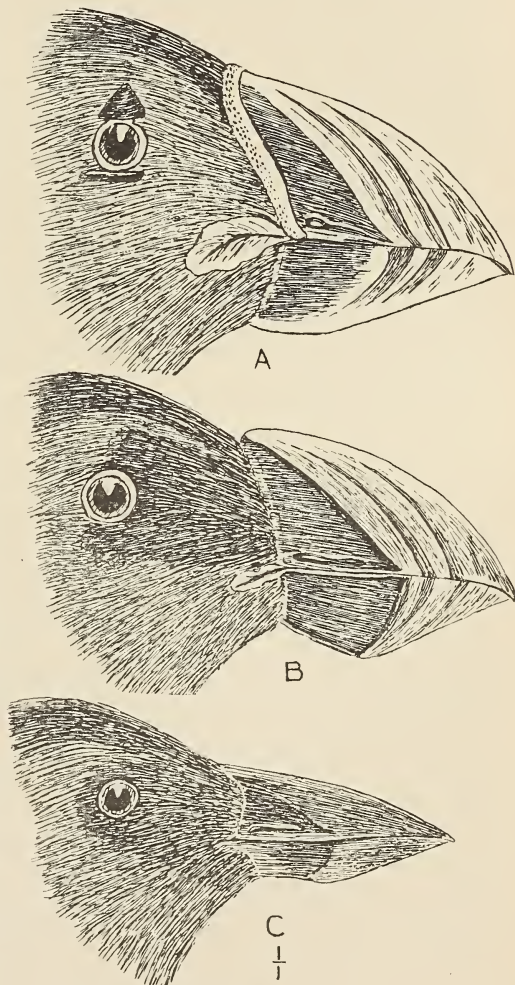
Nestling.—Closely covered with long, soft down with silky hair-like tips. Centre of under-parts white otherwise all uniform brown varying from blackish to buffish-brown, bases of down tinged grey. This down is replaced by juvenile feathers but some shorter and greyer down is replaced by under-down.

Juvenile.—Sides of head duller ash-grey, lores rather blacker and collar rather browner but otherwise like adult winter except

for small size. N.B.—Wing- and tail-feathers grow with juvenile body-plumage.

First winter.—The juvenile plumage appears to be retained but one was moulting slightly in February. Another July was like juvenile except for rather larger bill with one shallow groove and was commencing moult to 2nd winter.

Measurements and structure.—♂ wing 153–163 (one 166) mm., tail 39–45, tarsus 26–27, bill from feathers 42–50, greatest depth 35–38 (16 British breeding birds measured). ♀ wing 148–164, bill length 43–48, depth 34–38 (19 British breeding birds). First winter ♂ and ♀ wing 138–148, bill length 31–37, depth 18–20. Primaries: 1st and 2nd about equal and longest, 3rd 3–8 mm. shorter, 4th 10–16 shorter, 5th 19–28 shorter. Outer secondaries shorter than 10th primary, inner ones about equal to 9th, tips rounded. Tail rounded and central pair shorter than rest, 16 feathers, tips rounded. Tibia bare for a short distance near joint and inserted far back; tarsus compressed, three toes fully webbed; claws curved and fairly sharp especially inner one, middle one dilated. Bill in adult extremely compressed and expanded vertically, culmen arched, curving to somewhat obtuse decurved tip; proximal half of mandibles flattened, distal half with three deep, and a fourth shallower, narrow, curved grooves and corresponding ridges curving backwards nearly to base; in summer at base of upper



The Southern Puffin (*Fratercula arctica grabe*). A. Adult, summer. B. Adult, winter. C. Juvenile.

mandible a narrow, raised, horny rim with minute holes through which aborted feathers grow on posterior margin; this "rim" is shed with rest of outer sheath of bill in autumn making whole bill much smaller and base of different shape; lower outline of under mandible in summer slopes upwards gradually from base to tip, but in winter, when outer sheath is shed, has a prominent angle. Nostril a long slit near cutting edge of basal half of upper mandible. Juvenile and until about one year old with comparatively shallow and small bill without grooves, culmen sloping but not arched, gonyes about half length of lower mandible, angle prominent. In second summer bill as adult but smaller, not so arched and distal half with only two shallower grooves. "Rosette" of thick, puckered skin at gape in adult summer, reduced to narrow band in winter and young. Horny appendages, triangular above eye and rectangular below eye, in summer adult are lost in autumn.*

Soft parts.—Bill (ad. summer) basal rim of upper and margin of lower and first ridge dull yellow, flattened proximal portion blue-grey, rest bright red with extreme tip yellowish, rictal rosette and inside mouth yellow, (ad. winter) proximal portion grey-brown, distal half chrome-yellow shading to deep orange-red on culmen, (juv.) proximal half dark grey-brown, distal half reddish-brown; legs and feet (ad. summer) vermilion, (ad. winter) yellow, webs darker, (juv.) flesh; iris grey-brown or whitish to hazel; orbital ring (ad. summer) vermilion, (ad. winter) red; orbital appendages (ad. summer) blue-grey.

CHARACTERS AND ALLIED FORMS.—*F. a. arctica* (N. Norway, Iceland, N. America) is a larger but not a well-defined form as measurements overlap (♂ wing 158–176, bill summer 46–55);† *F. a. naumanni* (Spitsbergen) is still larger (♂ wing 180–191, bill 50–60). Distinguished from other British *Alcæ* by shape of bill.

FIELD-CHARACTERS.—Huge triangular brightly coloured bill and orange feet prevent confusion with any other Auk. Not dependent on vertical cliff faces like Common Guillemot and Razorbill, and large nesting colonies occur in districts unsuited to those species. The deep long-drawn guttural cry sounds like "a-r-r-r" or "o-r-r-r" under different circumstances.

BREEDING-HABITS.—Breeds usually in colonies, sometimes of great extent, in natural crevices or burrows, often excavated by bird, sometimes in turf on face of cliffs or on grassy, low-lying islands. *Nest.*—Scanty: a few bits of straw, or drift with generally several feathers, bits of grass, etc. *Egg.*—One only, often white, but traces of markings generally discernible beneath surface. Occasionally well-defined markings of brown or lilac, often in form of zone or at

* For full account of moult of bill and eye appendages see Bureau, *Bull. Soc. Zool. de France*, 1877, pp. 377–399: abridged *Zool.*, 1878, pp. 233–240 and plate.

† Nine breeding birds from southern Norway (Stavanger) have the same measurements as British, with one exception, viz. ♀ wing 170 mm.—H.F.W.

big end. Erythristic colouring can be detected in some cases by artificial lighting. Average of 100 British eggs, 60.8×42.29 . Max. : 66.5×40.7 and 63.4×45.3 . Min. : 55.6×41 and 64×38.9 mm.

Breeding-season.—First eggs may be found early in May but not general till a week or two later. *Incubation*.—By both sexes. Period 36 days (incubator) : 5 weeks (Hantzsch). Single brooded.

FOOD.—Mainly small fish (*Ammodytes tobianus* and *Clupea immat.*) but also to some extent small crustacea, especially Caridea (shrimps and prawns.)

DISTRIBUTION.—*British Isles*.—Resident. Breeds sparsely, Isle of Wight, mainland Dorset, Cornwall, Devon; abundantly Scilly Isles and Lundy; many colonies Wales and northwards mainland and isles, especially abundant Hebrides and Shetlands. Few colonies east side Scotland, breeds Farne Isles (Northumberland) and Flamborough (Yorks.), but not elsewhere east coast England. Formerly bred Kent and Sussex. Abundant various parts Ireland. Seldom near shore winter. Occasionally driven inland.

DISTRIBUTION.—*Abroad*.—Islands off Brittany, apparently those formerly nesting on Heligoland, and southern Norway and Sweden. Replaced by an allied form (*F. a. arctica*) on Bear Island, northern Norway, Iceland, south Greenland and eastern N. America, and by another (*F. a. naumanni*) on Spitsbergen and Novaya Zemlia, apparently also northern Greenland (?) and Jan Mayen.

ORDER ALECTORIDES.

This is a useful division, but its limits and systematic position have been differently considered. We look upon it as containing Bustards, Cranes, and Rails, apart from some purely tropical genera. The *Alectorides* may be said to stand between the *Galli* (Game-birds), and *Limicolæ*, but could not be placed in a linear arrangement of all orders. All are schizognathous and have no basipterygoid processes. Vomer always present. Mandibles without or with small processes. Sternum without spina interna. Dorsal vertebræ not fused. Young when hatched with thick simple downs, mostly strongly nidifugous. Eggs with bicoloured spots, often very glossy.

Key to families of order ALECTORIDES.

- | | | |
|---|---|--------------------------------------|
| 1 | { No hind-toe. Rectrices 18 to 20 | <i>Otididæ</i> |
| | { Hind-toe present. Rectrices 10 to 14 | 2 |
| 2 | { Small and middle sized, tarsus much less than 100 mm. | <i>Rallidæ</i> |
| | { Huge, tarsus much over 100 mm. | <i>Balearicidæ</i> (<i>Gruidæ</i>) |

FAMILY OTIDIDÆ.

The Bustards are a well limited family. So far as known their cervical vertebræ number 16 to 17. Bill short, as a rule shorter

than head. Nostrils holorhinal. Skin rather thin. Feathers thick, contour feathers with small aftershafts, under the feathers, chiefly on the breast, soft silky down, sort of powder-down, in most, at least the Palæarctic species, pink. No fifth secondary (aquincubital), 2nd and 3rd or 3rd and 4th or 5th primaries longest, inner secondaries but little shorter than primaries. 18 to 20 rectrices. Tarsus and bare portion of tibia with reticulate scales, no hind toe. Nails flattened, soles of feet wide.

Genus OTIS L.

OTIS Linnæus, Syst. Nat., ed. x, i, p. 154 (1758—Type by Linnean tautonymy and subsequent designation, Gray, 1840, *O. tarda*).

Head not definitely crested, bill shorter than head, at base wider than high. Nostrils free. Middle toe with claw about half length of tarsus or little more. Sexes different. (Bustards have been split into about a dozen genera, mostly on male characters only or for other insufficient reasons, it is therefore, without a review of the whole family, difficult to say how many species should be placed in the genus *Otis*.)

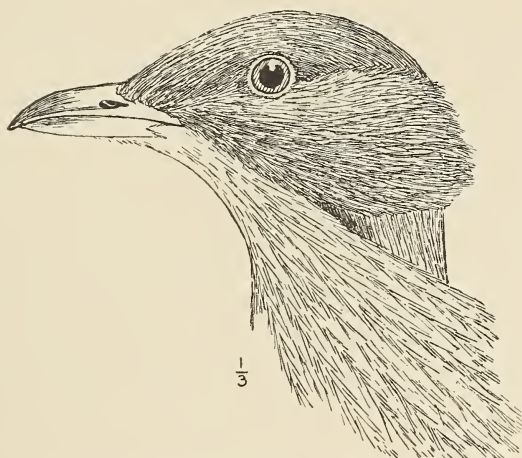
OTIS TARDA

473. *Otis tarda tarda* L.—THE GREAT BUSTARD.

OTIS TARDA Linnæus, Syst. Nat., ed. x, i, p. 154 (1758—Poland, Orient, Belgium, England. Restricted typical locality : Poland).
Otis tarda Linnæus, Yarrell, III, p. 193 ; Saunders, p. 523.

DESCRIPTION.—*Adult male. Winter*.—Head and neck all round ash-grey, chin whitish, (some elongated moustachial feathers about 50 mm.), feathers of centre of crown somewhat elongated and narrow with blackish, and some rufous, central streaks and tips : base of back of neck rusty-chestnut ; whole of rest of upper-parts cinnamon-rufous broadly and closely barred black, back and upper tail-coverts rather more rufous and black bars narrower ; upper-breast ash-grey as throat but feathers at sides with varying amount of cinnamon-rufous with some black spots ; whole of rest of under-parts including axillaries and under wing-coverts white, but coverts along edge of wing ash-grey ; tail-feathers with white bases and tips, broad black subterminal band (not always across inner web), and between this and white of base outer webs cinnamon-rufous usually with some black zigzag lines and inner webs often mostly white washed rufous but sometimes as outer webs, outer feathers white with subterminal band greyer (varying), two central pairs much as upper tail-coverts but with pale buffish centre at tip ; primaries brown, paler on inner webs which have white bases while outer webs have ash-grey ones, shafts straw-colour, inner feathers blackish with white bases ; secondaries with white proximal halves and brown-black distal halves, black decreasing on inner feathers, and innermost with only narrow black tips ; primary-coverts ash-grey, tips mottled darker

and inner feathers with most of inner webs blackish-grey ; greater coverts white, outer ones with blackish-grey mark at tip, innermost tinged ash-grey ; median coverts and outermost lesser pale ash-grey tipped white, innermost median and rest of lesser like upper-parts but upper series of lesser more dusky (less jet-black) with cinnamon tips ; downy bases of feathers and down pink. This plumage is acquired by complete moult in late summer and early autumn.* *Summer*.—A moult of the body-feathers takes place in early spring (March). Like winter but chin and upper-throat



The Great Bustard (*Otis t. tarda*). Male adult. Summer.

whitish, shading from rufous-buff to chestnut (often with some ash-grey) on upper-breast, feathers of which are long and of somewhat loose structure and more or less spotted black at tips, moustachial feathers white, much longer (120–150 mm.) than in winter and more numerous, stiff and with rami widely separated.

Adult female. Winter.—Like male but feathers of centre of crown shorter and good many feathers of crown barred rufous and black, moustachial feathers only very slightly elongated and rami not widely separated ; primary-coverts considerably darker ; and greater coverts marked (sometimes barred or mottled) greyish-black ; inner secondaries more barred and mottled black, greyish-black and cinnamon ; median coverts with considerable (but varying) amount of cinnamon and black-brown markings. *Summer*.—Like winter but crown uniform ash-grey, moustachial feathers rather longer, fore-neck tinged cinnamon-buff and often with a little rufous.

* The primaries sometimes appear to moult differently in each wing, but I see no evidence for a number being dropped together as has been stated.—H.F.W.

Nestling.—Closely covered with short down. Crown, wings, lower flanks, back of tibia, and upper-parts, except neck, with about equal blotches and lines of sandy-buff and brown to blackish-brown (down appearing brown has buff base); nape, neck and throat mostly sandy-buff with a black-brown stripe down centre of upper half of back of neck and several spots and streaks of black-brown on throat and sides of head and neck; rest of under-parts uniform sandy-buff becoming paler and whitish in centre. Down is replaced by feathers.

Juvenile.—Crown cinnamon-buff much marked and finely powdered with blackish-brown; neck and throat all round dull grey faintly barred dusky and feathers tipped cinnamon-buff; over eye whitish-buff; ear-coverts mottled grey and tipped pale buff; chin dull white; base of neck all round more cinnamon, on sides with black-brown; upper-parts paler, more cinnamon, not so rufous as adult and dark bars browner and not so jet-black; under-parts white but tips of feathers of sides of breast and under tail-coverts tinged buff and barred dusky; tail-feathers: outer pair white tinged buff marked grey-black below tip, rest more cinnamon with two blackish bands and vermiculations and buff-white tips with extreme tip cinnamon-buff, central ones darker cinnamon with often small, wavy, dusky bar at tip; primaries tipped cinnamon-buff; secondaries tipped and mottled white and inner secondaries white and cinnamon-buff mottled and barred grey-black; primary-coverts with distal half dark grey, basal paler and mottled grey, tip buff; greater coverts white much mottled greyish-black, with brown-black subterminal bar and buff tip; rest of coverts cinnamon-buff barred brown-black, outer ones more or less washed grey with buff tips and often buff inner webs and black subterminal bars.

First winter and summer.—Like adults but moustachial feathers less developed and wings and tail like juvenile, buff tips of primaries and primary-coverts especially affording easy distinction but tips of tail and many wing-coverts become gradually worn down. N.B. —Primaries and tail-feathers considerably narrower and more pointed than in adult, bird considerably smaller in bulk at all events in first winter. The juvenile body-feathers are moulted in autumn but not tail, wing-feathers or wing-coverts.

Measurements and structure.—♂ wing 615–660 mm. (measured with tape, see Vol. I, p.* xiii), tail 215–260, tarsus 140–170, bill from feathers 45–60 (11 measured). ♀ wing 480–515, tail 190–210, tarsus 110–130, bill 35–43. Primaries: ♂ ad. 5th longest, 3rd and 4th equal or 5–10 mm. shorter, 1st 65–80 shorter, 2nd 10–20 shorter, 6th 30–50 shorter; 2nd to 6th abruptly emarginated outer webs, 7th less so, 1st to 5th emarginated inner webs. Outer secondaries about equal 10th primary and inner 6th primary, tips broad and rounded. Tail rounded, 20 broad feathers, tips rounded. Bill stout, broad and rather flat at base, culmen curved gently, tip rather blunt, under mandible shallow, gonys rather short and

sloping. Nasal groove wide and large, nostrils large and oblong. About one-third of tibia bare; tarsus rather stout; only three toes, strong, flattened beneath, claws flattened, convex, blunt and nail-like. On each side of upper-neck posterior to moustachial region a long bare patch, longest in adult male and not present in juvenile; becoming prominent in adult male when long sac under skin down centre of throat is dilated during "display."

Soft parts.—Bill yellowish-brown, tip dark horn; legs and feet brown; iris hazel.

CHARACTERS AND ALLIED FORMS.—*O. t. dybowskii* (Transbaikal eastwards) adult male has paler head and neck, grey median wing-coverts and lesser mostly dark grey; *O. t. korejewi* (Turkestan) is stated to have narrower black bars on upper-parts. Large size and grey head and neck (without black) distinguish the species from other British Bustards.

FIELD-CHARACTERS.—A bird of open plains and rolling cornlands, where its great size at once attracts attention, though few birds are more adept at taking cover when alarmed. On the wing great bulk of body as compared with wings, outstretched neck and feet are not to be confused with more graceful contours of all our other birds of similar size. At rest sandy colouring of upper surface is characteristic and when in display males show much white. At great distances on open plain a flock presents much the appearance of sheep. Where ground shows footprints, the heavy unwebbed toes leave characteristic tracks. (F.C.R.J.)

BREEDING-HABITS.—Haunts open plains, cornfields, etc. *Nest.*—Mere scrape in corn or fallow field, trampled by bird and generally with feathers lying about. *Eggs.*—Normally 2-3, occasionally 4, but in some districts 2 are almost invariably found, olive-green with blotches of brown, but blue varieties have been recorded. Average of 100 eggs, 79.4×56.76 . Max.: 89.5×56.4 and 82.7×60.7 . Min.: 69×56 and 71.6×51.5 mm. *Breeding-season.*—From end April and early May onward in Spain, but usually in latter half of May in northern part of range. *Incubation.*—By female only. Period 25-28 days in confinement. Single brooded.

FOOD.—Mainly vegetable matter: grass, turnip-tops, various kinds of grain and leaves of plants: also insects: orthoptera (grasshoppers, crickets, mole-crickets, and earwigs), coleoptera (*Dytiscus*, *Haltica*, *Silpha*, *Otiorhynchus*, *Melolontha*, *Geotrupes*, *Calosoma*, *Elatér*, etc.), hemiptera, diptera, etc. Occasionally worms, slugs, lizards, frogs, and field-mice.

DISTRIBUTION.—*British Isles.*—Very rare vagrant. Formerly bred many parts England and at one time in south-east Scotland. Last survivor Yorks., 1832 or 1833, last bred Norfolk and Suffolk about 1838, dying out a few years later. In winters 1870-71, 1879-80, and 1890-91 considerable number occurred. Attempted re-introduction in Norfolk (1900) may account for several shot Dec., 1902,

Lines. (two), Glamorgan (one), and Ireland (two), or these may have been genuine immigrants. Has occurred very rarely mainland Scotland and once Orkneys (1886).

DISTRIBUTION.—*Abroad*.—Europe from central Germany (formerly France, Denmark and south Sweden) to Russia, Khirgiz Steppes and W. Siberia, southwards to Spain and N. Morocco, Asia Minor; migrates to Persia. Exact limit eastwards uncertain, but in central Asia (Turkestan) and eastern Asia, closely-allied forms replace European race. Casual Belgium, Greece, Cyprus, Palestine.

OTIS TETRAX

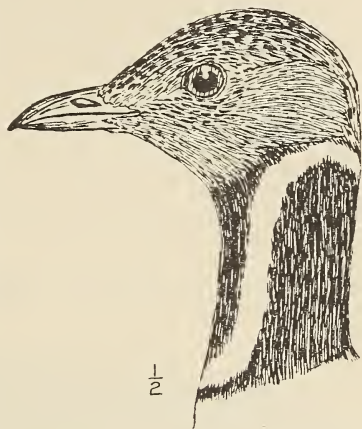
474. *Otis tetrax orientalis* Hart.—THE EASTERN LITTLE BUSTARD.*

OTIS TETRAX ORIENTALIS Hartert, Nov. Zool., 1916, p. 339 (W. Siberia to Germany, type Sarepta; name ex Brehm nomen nudum 1866).

DESCRIPTION.—*Adult male. Winter*.—Crown yellow-buff closely and irregularly barred black, nape rather more streaked black; back of neck paler buff lightly speckled dusky; mantle, scapulars, back and upper-rump pale buff and yellow-buff with close and irregular wavy black bars and varying number of feathers with subterminal black blotches especially on mantle and scapulars; feathers of lower-rump as rest but ground-colour whiter; upper tail-coverts mostly white with a few broad black bars or spots, under ones as lower-rump; lores, over and under eyes, ear-coverts, and sides of upper-neck and throat buff streaked black, centre of throat with shorter, spot-like streaks; lower-neck and throat with narrow black bars rather widely spaced; some feathers on sides of breast buff with fine wavy black bars, chin, breast and belly white with some buff tinge on chin and upper-breast; lower flanks with a few broad black bars or spots; upper feathers of under tail-coverts same, lower ones more barred and speckled; tail: outer feathers white with one to three widely spaced black bars, distal half or more thickly vermiculated black but tip white, varying number of inner feathers buff with more black bars and vermiculated nearly to tip but white or whitish at base; primaries: outer four dark

* The only specimens of British taken Little Bustards that I have been able so far to examine are three in the British Museum collection (♀ Hampshire, no date, ♀ Plymouth, no date, Montagu coll., ♂ Norfolk, no date) and these are all of this form. It is quite possible that the Western Little Bustard, *Otis tetrax tetrax* L. [OTIS TETRAX Linnaeus, Syst. Nat., ed. x, i, p. 154 (1758—"Europe, especially France," typical locality therefore France)] also occurs, but until this is proved it cannot be admitted to the list. *O. t. tetrax* inhabits Spain, Portugal, France to Marne, N.W. Africa (Morocco, Algeria, Tunisia), casual Rhine, Belgium, Canary Is., Madeira. Both sexes in winter and summer are like *O. t. orientalis* but the ground-colour of upper-parts and wing-coverts is of a warmer, more sandy shade of buff, black vermiculations are usually rather finer and black marks usually less pronounced. Measurements are rather smaller than *O. t. orientalis*, viz. ♂ wing 237-248 mm., tail 90-100, tarsus 65-70, bill 24-25 (7 measured). ♀ wing 240-245.—H.F.W.

brown with white bases and extreme tips whitish, rest mostly white with a black tip and white apex which increases in inner feathers and black becomes subterminal band sometimes reduced in innermost to a black mottling; secondaries pure white or with a subterminal black spot or incomplete bar, inner ones buff vermiculated and barred black as scapulars; primary-coverts black with tips and bases white; greater coverts white with bases thickly speckled black; inner ones with only tips pure white and rest of feathers buff and white vermiculated black as upper-parts; rest of wing-coverts as upper-parts but without black blotches and vermiculations finer, tips of median white or buffish-white; bastard-wing and coverts along edge of wing white with some black marks. Downy bases of all feathers pink or pinkish-brown. This plumage is acquired by complete moult Aug.-Nov. *Summer*.—A moult confined to body-plumage takes place March to May (sometimes beginning Jan.). Chin, under eyes, ear-coverts extending down centre of upper-throat and on to sides of upper-neck, and some feathers of lower-nape slate-blue, lower feathers on throat more or less tipped black, followed by two alternate gorgets of white and black, upper white one sometimes meeting at back of neck, upper black, broad and forming a complete collar, feathers of which on sides and back of neck are narrow and elongated, lower white and black bands extending to sides of lower-neck; rest of plumage as winter.



The Eastern Little Bustard (*Otis t. orientalis*).
Adult male, summer.

Adult female. Winter and summer.—Much like adult winter male but upper-parts more heavily blotched and barred with black and upper-mantle usually somewhat spangled with small buff marks of diamond or leaf shape; breast, sides and flanks tinged buff and boldly barred black-brown; tail-feathers usually with wider black bars and coarser vermiculations; primaries (in colour) as male but secondaries, and greater coverts and coverts along edge of wing considerably barred with black. Moults like male.

Nestling.—Much like that of Great Bustard but buff colour rather paler and blackish markings of upper-parts rather more restricted.

Juvenile. Male and female.—Much like adult female but outer primaries speckled buff at tips and outer webs more or less mottled, inner primaries with tips tinged buff and barred or vermiculated brown-black; secondaries more barred and spotted black than in adult; primary-coverts barred or mottled buff at tips; greater

coverts and those along edge of wing more suffused buff and more narrowly barred.

First winter. Male and female.—As juvenile. The juvenile body-plumage is moulted (probably not completely) in early autumn. *First summer.*—A partial moult of body-plumage takes place in March after which body-plumage of male becomes rather more like adult *winter* male, but still has some barred feathers on flanks though a good many new ones are white unbarred.*

Measurements and structure.—♂ wing 247 (two 241)–257 mm., tail 91–108, tarsus 64–70, bill from feathers 22–25 (14 measured). ♀ wing 242–260. Primaries : ♂ ad. 2nd and 3rd longest, 1st 10–25 mm. shorter, 4th 20–31 shorter, 5th 5–10 shorter, 6th 25–40 shorter ; outer webs of 2nd to 6th abruptly emarginated, 4th narrow and smaller (about equal to 6th) and basal half of inner web abruptly reduced in width by about one-third, and tip of inner web with more shallow emargination ; ♀ and juv. and 1st winter and summer ♂



Fourth primary of adult male Little Bustard to show emarginations.

4th normal and only 2–5 mm. shorter than longest, 1st 20–30 shorter. Outer secondaries about as long as 10th primary, tips broad and slightly rounded, innermost as long or nearly as long as longest primaries, tips sharply rounded. Tail rounded, 18 feathers, tips rounded. Rest of structure as Great Bustard but no bare patches on sides of neck.

Soft parts.—Bill blackish along ridge and tip, rest bluish-grey ; legs and feet greyish-yellow ; iris pale yellow.

CHARACTERS AND ALLIED FORM.—For distinctions of *O. t. tetraz* see footnote, page 816. Small size, absence of tufts of elongated feathers, and black and white collars of adult summer male distinguish species from other British Bustards.

FIELD-CHARACTERS.—Prefers rough pastures and fallow fields with rank growth of weeds, and when flushed rises with strong and whistling flight, showing a surprising amount of white on the wing to those who only know it from figures or skins. Quite a small bird as compared with Great Bustard, and like it has sandy mantle and white under-parts. Difficult to observe at rest but black and white collar of male in spring is very characteristic. When in flight at any height appears almost entirely white in the distance. (F.C.R.J.)

* The 4th primary in the male is normal like that of the female in the bird's first year. Mr. W. H. St. Quintin informs me that a male hatched in captivity had the peculiar 4th primary of the adult after its first complete moult, i.e. at the age of about 16 months.—H.F.W.

BREEDING-HABITS.—A bird of the grassy steppes. *Nest.*—Slight, of grasses, etc., in hollow on ground among rank grass or weeds. *Eggs.*—3-4, occasionally 5, normally brownish-olive, but ranging from pale bluish-green to reddish-brown, with high gloss. Average of 58 eggs, 51.74×38.48 . Max. : 57.7×35.2 and 51.1×41.6 . Min. : 46.5×35.8 and 57.7×35.2 mm. *Breeding-season.*—From beginning of May onward. *Incubation.*—By female. Period (observed in confinement 20-21 days in Western race).

FOOD.—Mainly vegetable matter : in England turnip-tops, clover, grass and various plants (hawkweed, dandelion, lungwort, etc.) ; also insects, including coleoptera (*Melolontha vulgaris*, *Pterostichus niger*, *Otiorhynchus notatus*, *Carabus*, etc.), also orthoptera (grasshoppers and earwigs). Naumann says that worms, snails, small frogs, and mice are also eaten.

DISTRIBUTION.—*England.*—Occurrences fairly numerous Yorks., Norfolk and Suffolk, also Cornwall, but less so southern counties England, and only very occasional elsewhere. *Scotland.*—Five. Forfar, Fife, Elgin (two) and Kincardine. *Ireland.*—Nine. Kerry, Cork (two), Wicklow (two), Longford, Mayo (two), Clare. Usually in winter, occasionally spring, e.g. Suffolk, May 3, 1898, Derby, May 14, 1901.

DISTRIBUTION.—*Abroad.*—W. Siberia, Turkestan, Afghanistan, Russian Steppes, Rumania and Danube valley to Austria, and apparently Poland and E. Germany, to W. Prussia and Thuringia. Northern birds migratory, wintering Mesopotamia, Syria, N.W. India, Asia Minor, Cyprus, Egypt, casual Baltic Republics, Scandinavia, Finland, Denmark, western Germany.

Genus CHLAMYDOTIS Less.*

CHLAMYDOTIS LESSON, Rev. Zool., 1839, p. 47 (Monotype : "*Otis houbara*" = *Chlamydotis undulata*).

Differs at first glance from other Bustards in its long pendant crest of narrow feathers and long frill or ruff along sides of neck, in both sexes. Sexes not obviously different except in size. Only one species in three distinct subspecies, inhabiting great desert belt from Fuertaventura to Indian desert.

CHLAMYDOTIS UNDULATA

475. *Chlamydotis undulata macqueenii* (Gray & Hardw.)—MACQUEEN'S BUSTARD.

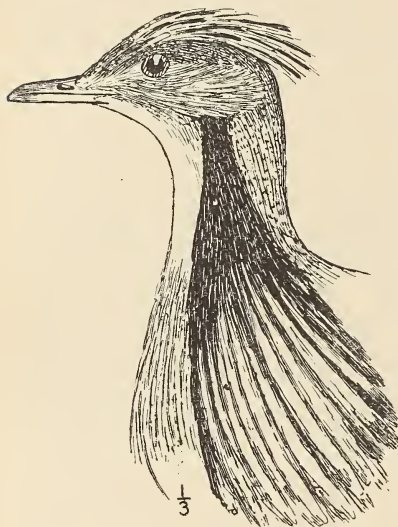
OTIS MACQUEENII Gray and Hardwicke, Illustr. Ind. Zool., II, pl. 47 (1834—India).

Otis macqueeni J. E. Gray, Yarrell, III, p. 221 ; Saunders, p. 527.

DESCRIPTION.—*Adult male. Winter.*—Fore-head and sides of crown sandy-buff finely vermiculated black ; centre of crown white,

* *Houbara* Bonaparte, 1832, is a nomen nudum and cannot be used,

feathers very narrow and elongated, longest having distal half or more black, some with extreme tips sandy-buff vermiculated black ; nape feathers shorter, white with tips finely vermiculated black ; hind-neck black, feathers tipped white ; lower hind-neck white, feathers short, loose and downy, similar feathers adjoining mantle but buff and finely vermiculated dusky ; whole of rest of upper-parts sandy-buff (varying somewhat in shade) finely and closely vermiculated black, mantle and scapulars with widely spaced broad black bars, those on exposed portion of feathers being vermiculated with sandy-buff and thus not clearly defined, back and rump without



Macqueen's Bustard (*Chlamydotis macqueenii*).
Adult, male.

bars, upper tail-coverts with bars on outer webs better defined and slate-coloured ; lores, round eyes and ear-coverts buffish-white, feathers with black, hair-like projecting shafts ; down centre of sides of neck a broad black band of elongated feathers, those of basal part narrow, of very loose structure and very long (120–150 mm.) forming long black-and-white tufts, upper feathers being black with white centres and lower feathers being white ; chin white tinged cream or ash-grey ; throat ash-grey, tips of feathers lightly vermiculated buff and black ; feathers at base of throat narrow and elongated (forming gular tuft) upper ones pale blue-grey with slight vermiculations at tips of some, under feathers white ; rest of under-

parts white, with some black spots down centre of breast and sides of upper-breast buff vermiculated black, lower flanks narrowly barred black ; under tail-coverts same and sides tinged buff and vermiculated black ; under wing-coverts and axillaries white ; tail-feathers cinnamon-buff vermiculated black (except at base) tipped white and broadly barred slate, central feathers with tips like upper-parts ; primaries : outer five white with about distal third black, inner ones mostly black with narrow white tips and white bases ; secondaries same but basal part buff vermiculated dusky-black, innermost as scapulars ; primary-coverts as secondaries but usually less vermiculated at base ; greater coverts and outermost median pale grey to sandy-buff finely vermiculated black, tipped white and with black subterminal band ; rest of median, innermost greater and all lesser coverts as upper-parts. Downy bases of feathers and down pink. This plumage is acquired by complete moult Oct.–Dec. and probably chiefly in Aug. and Sept. *Summer*.—

A moult apparently confined to body-feathers takes place Feb.-March. Plumage as winter.

Adult female. Winter and summer.—Like male but centre of crown with little white and black feathers shorter; nape buff vermiculated black; throat more strongly vermiculated black; gular tuft much smaller, feathers shorter and not so pale ash-grey, under feathers more heavily barred and vermiculated black; lower-flanks and under tail-coverts more lightly barred and vermiculated than in male; outer primaries more tinged with rufous-buff at base of black portion.

Nestling.—General pattern and appearance much like that of Great Bustard but on upper-parts pale stripes and blotches white and dark ones with down golden-buff with longish black tips, under-parts white and throat with two irregular lines and oval blotches of buff outlined with blackish. Down is replaced by feathers.

Juvenile.—(Not examined.)

First winter. Male.—Like adult female; outer primaries sometimes mottled white at tips, tail-feathers sometimes with narrow brown bar at tips. *Female.*—Like adult female but scarcely any black and usually no elongated feathers on crown; gular tuft smaller and feathers usually darker and often tipped black, under feathers usually more vermiculated; tail-feathers with bars brown and only tinged slate and a narrow brown bar at tips; outer primaries with small mottled white tips; secondaries more or less vermiculated at tips.

Measurements and structure.—♂ wing 383-430 mm., tail 185-205, tarsus 93-102, bill from feathers 35-42 (12 measured). ♀ wing 345-380, bill 32-36. Primaries: 3rd and 4th longest, 2nd usually as long, sometimes 5-10 mm. shorter, 1st 30-50 shorter, 5th 10-30 shorter, 6th 75-90 shorter; 2nd to 5th abruptly and 6th slightly emarginated outer webs, 1st to 4th abruptly and 5th slightly emarginated inner webs. Outer secondaries slightly shorter than 10th primary, innermost as long as 6th or 7th, tips rounded. Tail rounded, 20 feathers, tips rounded. Bill with proximal half flat and broad and somewhat depressed, distal half rather slender. Nostrils large and oval. Legs and feet as in Great Bustard.

Soft parts.—Bill brownish-black; legs and feet pale straw-colour; iris very bright, pale straw-colour.

CHARACTERS AND ALLIED FORMS.—*C. u. undulata* (Sahara) has black vermiculations of upper-parts, wing-coverts and tail coarser, upper feathers of tuft at sides of neck entirely black and upper feathers of gular tuft vermiculated dark brown; *C. u. fuertaventuræ* (E. Canaries) has upper-parts, wing-coverts and tail considerably darker than last, more thickly vermiculated and barred with black-brown. Size intermediate between Great and Little Bustards, sandy coloured upper-parts and long black and white neck-tufts distinguish species.

FIELD-CHARACTERS.—One seen by me in Yorkshire (Oct., 1896)

had on the ground stately but alert attitude and movements, black and white tufts on sides of neck very conspicuous. In flight wings appeared rather round but not broad and of striking pattern, black being divided in middle by broad white band, upper-parts about colour of Short-eared Owl. Flight low and deliberate. (H.F.W.)

BREEDING-HABITS.—Haunts desert with growth of low bushes. *Nest.*—Practically none beyond scrape in ground. *Eggs.*—3 or 4, sometimes 2 only, brown with blotches and spots of darker brown. Average of 90 eggs, 62.05×45.07 . Max. : 68.7×44.2 and 62.8×48.7 . Min. : 56×46.2 and 57.4×40 mm. *Breeding-season.*—From 1st week April onward through May in Syrian Desert. *Incubation.*—No details.

FOOD.—Insects and vegetable matter chiefly. Insects include orthoptera, coleoptera (*Carabus*, etc.), lepidoptera larvæ (caterpillars of yellow underwing moth), lizards, etc., mollusca (small snails). Vegetable matter includes grass, and leaves and flowers of rag-wort (*Senecio aquaticus*) in Europe, but in native haunts chiefly leaves and fruits of desert bushes.

DISTRIBUTION.—*Great Britain.*—Four. One Kirton-in-Lindsey (Lines.), Oct., 1847. Male adult near Redcar (Yorks.), Oct. 5, 1892. Male near Spurn (Yorks.), Oct. 17, 1896 (Saunders, p. 527). Female St. Fergus (Aberdeen), Oct. 24, 1898 (Saunders, p. 756).

DISTRIBUTION.—*Abroad.*—From W. Siberia and Turkestan, Baluchistan, Afghanistan, E. Persia to Syria and Palestine, Transcaucasia, Khirgiz Steppes and Lower Volga. Migratory, wintering in western India, Arabia; stragglers have been obtained in many parts of Europe: west Russia, Livonia, Switzerland, Oeland, Finland, Sweden, Germany, Bohemia, Holland, Belgium, France, Italy. Replaced by other forms in northern Sahara and Fuerteventura, east Canaries.

FAMILY BALEARICIDÆ.

The Cranes are huge schizognathous and schizorhine birds with long necks and legs. 19–20 cervical vertebrae. No basipterygoid processes, 11 primaries, 12 rectrices. Aquintocubital, i.e. without 5th secondary quill; inner secondaries very long, longer than primaries. Oil-gland feathered. Hind toe present. Chick nidifugous.

Genus MEGALORNIS Gray

MEGALORNIS Gray, List Gen. B., 2nd ed., p. 85 (1841—Monotype *M. grus*). (*Grus* auct., but not of Pallas, 1766.)

Head in adult partially bare of feathers, but more or less thinly covered with short bristles. Small aftershafts. Wings long and wide, 3rd primary as a rule longest. Tail short, rounded to almost square. Bare portion of tibia more than one-third of length

of tarsus. Inner secondaries much elongated, longer than to tips of primaries. Sexes alike in colour. Head and neck fully feathered in young birds. No powder-down patches. Sternum peculiar, having a hollow groove in which lies the windpipe, which is quite differently shaped in the various species. The genus is often, and generally inconsistently, split up into several genera, according to shape and extent of bare parts on head and neck; these, however, only visible in adults, are not good generic characters, and the genus may be taken as consisting of 11 species, 8 of which are Palæarctic. Nests on ground.

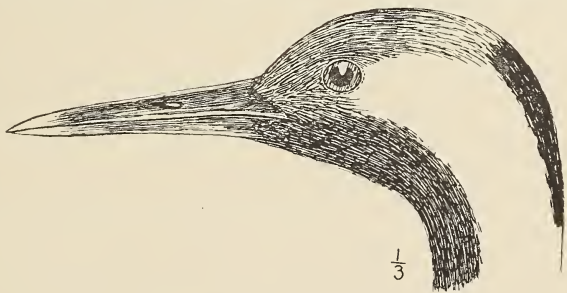
MEGALORNIS GRUS

476. *Megalornis grus grus* (L.).—THE COMMON CRANE.

ARDEA GRUS Linnaeus, Syst. Nat., ed. x, i, p. 141 (1758—Europe, Africa. Restricted typical locality: Sweden).

Grus communis Bechstein, Yarrell, III, p. 178; Saunders, p. 521.

DESCRIPTION.—*Adult male and female. Winter.*—Lores, fore-head and crown thinly covered (especially sparse on back of crown, skin of which is red) with black bristle-like plumes; back of head and nape, chin and whole throat blackish-grey; sides of head from eye through ear-coverts and down back of neck nearly to base white or greyish-white; rest of upper-parts and under-parts including



The Common Crane (*Megalornis g. grus*).

axillaries and under wing-coverts slate-grey tinged brown and tips of feathers when worn becoming dark brown and those of some scapulars sometimes blackish; edges of upper tail-coverts blackish; tips of tail-feathers blackish, bases slate-grey; primaries and primary-coverts black, tinged grey at extreme bases; secondaries slate-grey with tips black extending further on outer webs, long, curved, pointed inner ones with black tips extending in wedge-shape; wing-coverts slate-grey, usually rather paler than upper-parts, greater with black tips chiefly of inner webs, innermost greater much elongated, rami separated, curved and drooping except centre of tip which is black with rami close and normal. This plumage is acquired by complete moult July–Oct. *Summer.*—

A partial moult takes place Dec.-Feb. involving some body-feathers, long innermost secondaries and greater coverts and sometimes some outer wing-coverts. Plumage as winter.

Nesting.—Closely and thickly covered with down. Whole upper-parts bright foxy-rufous, crown and neck paler and darkest down centre of mantle and back, sides of head and under-parts paler rufous-buff becoming whitish on chin, centre of under-parts and under wings, bases of rufous down dark brown. This down is replaced by feathers of juvenile. A short greyish down subsequently grows under the rufous down and is replaced by under-down of juvenile.

Juvenile.—Whole crown and sides of head pale brown to rufous-brown, parts sparsely covered with bristles in adult are closely covered with narrow feathers; back of neck dark grey, feathers tipped pale brown, giving a somewhat spotted appearance, throat same but rather paler, chin grey tipped brown; rest of plumage as adult but darker grey and feathers, especially of upper-parts, with pale brown to rufous-brown tips and wing-coverts with blackish shaft-lines; innermost wing-coverts not nearly so long as in adult and rami only slightly separated.

First winter and summer.—Tips of feathers of upper-parts become paler brown by wear, and in late winter or early spring a partial moult takes place of body-feathers and innermost secondaries and greater coverts, after which head and neck become much like adult but crown more closely covered with bristle-like feathers, bases of which have brown rami, sides of head and neck dull greyish-white, back of neck grey-black mixed with brown, innermost secondaries and greater coverts shorter and not of such loose structure as in adult, new body-feathers purer grey than juvenile. N.B.—Little material available.

Measurements and structure.—♂ wing 555–610 mm. (measured with tape, see Vol. 1, p.* xiii), tail 190–220, tarsus 230–250, bill from feathers 105–118 (6 measured). ♀ wing 545–600, bill 103–113. Primaries: 2nd, 3rd and 4th longest, 1st 25–35 mm. shorter, 5th 20–35 shorter, 6th 95–125 shorter; outer five somewhat decurved and outer and inner webs emarginated. Outer secondaries rather longer than 10th primary, tips rounded, inner elongated, curved secondaries reaching about 10 cm. beyond primaries in folded wing. Tail rounded, 12 feathers, tips rounded. Under tail-coverts as long as tail-feathers. Bill straight, stout, narrow and compressed and pointed, ridge of upper mandible broad and flat for about proximal two-thirds, gonys sloping very gradually. Nostrils oblong, narrow and about middle of long and rather deep nasal groove. Nearly half tibia bare; tarsus comparatively slender; four toes, hind one very small, others long; claws strong, that on inner toe larger, more curved and sharper than others.

Soft parts.—Bill dull greenish-horn, base tinged reddish; legs and feet black; iris red; skin of fore-part of head bluish-black and of hind-part red and “warty.”

CHARACTERS AND ALLIED FORM.—*M. g. lilfordi* (E. Siberia) is rather paler on upper-parts and wing-coverts and red area on hind-part of crown is much restricted. Large size, almost uniform grey colour, absence of elongated feathers on head and breast and almost bare crown distinguish Crane from other British birds.

FIELD-CHARACTERS.—A large, long-legged somewhat Heron-like bird, usually preferring marshy ground, and graceful in shape, light head and more uniform leaden-blue colouring than Heron. At close quarters black and white on head and neck can be distinguished and crimson patch on crown is quite characteristic, but the apparently large and loosely feathered tail caused by the elongated secondaries forms a better character in distance. Flies with neck outstretched, frequently in V formation, and when colour cannot be seen against sky, loud clanging call-notes form a certain distinction from Storks which are silent on the wing, but might be mistaken for them in distance. (F.C.R.J.)

BREEDING-HABITS.—Haunts morasses, lagoons and swampy woods. *Nest*.—A heap of vegetable matter, reeds, sedge, rushes or other available material, sometimes with twigs as foundation, placed in water in reed-bed or in open swamp and sometimes on marshy clearings in thick forest or in thinly wooded swamps. *Eggs*.—Two, though three are said to have occurred, elongated oval, ranging from greyish-olive to brown with a greenish tinge, blotched and spotted with dark and light reddish-brown and ashy-grey. Average of 100 eggs, 96.42×62.35 . Max. : 109×63.5 and 107×67 . Min. : 87.8×60.8 and 104×56.7 mm. *Breeding-season*.—From mid-April in S. Europe but later in Central and N. Europe ; not till June in Arctic region. *Incubation*.—Is said to be shared between the sexes and the period is given as about 30 days (Wurm). Single brooded.

FOOD.—In British Isles vegetable matter, roots of grasses and aquatic plants, also insects, including diptera (*Tipula*), coleoptera (*Agriotes*, *Aphodius*, *Geotrupes*, etc.), and mollusca (*Arion* and small univalves). On Continent seeds of grain of various kinds (oats, acorns, beans, rice, buckwheat, etc.), leaves of grass, clover, corn, orthoptera (*Gryllotalpa*, etc.), odonata, and on one occasion a small bird (*Acrocephalus paludicola*), frogs, small mammals such as mice and shrews, worms, etc.

DISTRIBUTION.—*British Isles*.—Rare vagrant. Bred East Anglia up to about 1600 and subsequently regular winter-visitor (perhaps also common in Ireland 12th–14th century) but for last century or more only irregular. Has occurred most counties England ; rarely Wales (last Anglesey, May, 1908) ; rarely Scotland (latest Pentland Skerries, May, 1903, Shetlands, May, 1906, Lewis (O. Hebrides), May, 1906, Kirkcudbrightshire, June, 1920) ; very rarely Ireland (latest Tipperary, Sept., 1906, Donegal, June, 1896). Bones found in cave in Clare.

DISTRIBUTION.—*Abroad*.—Breeds in Europe from Scandinavia, Finland, Livonia, greater part of Russia, and N. Germany to Balkan

Peninsula, locally in N. Italy, S. Spain. In Asia to W. Siberia and Turkestan, while a closely-allied race replaces it further eastwards. European Cranes migrate in autumn southwards to Africa as far as Morocco, Algeria, Tunisia, Kordofan, Sobat, to Abyssinia. Once Færoes.

[NOTE.—AN AMERICAN BROWN CRANE, *Megalornis canadensis* (L.), recorded as shot co. Cork, Ireland, September 14th, 1905 (A. R. Nichols, *Irish Nat.*, 1907, p. 209), had probably escaped from captivity (*Brit. B.*, I, p. 90). This species inhabits N. America in two subspecies, also N.E. Siberia, and migrates in winter to Mexico, casual California.]

[NOTE.—A DEMOISELLE CRANE, *Anthropoides virgo* (L.), one of two seen, said to have been shot Orkneys, May 14th, 1863 (Yarrell, III, p. 192 ; Saunders, p. 522), had probably escaped from captivity. Another was erroneously recorded from Somerset. The bird breeds in south Spain (?), the Dobrogea and south Russia, as well as in north-west Africa, and many parts of Asia, migrating south to Nile, Atbara, Sobat, Abyssinia, while stragglers have occurred in Sweden, Heligoland, Germany. Frequently kept in confinement.]

[NOTE.—AN AFRICAN CROWNED CRANE, *Balearica pavonina* (L.), shot in Ayrshire, Sept. 17, 1871, had doubtless escaped from captivity (Yarrell, III, p. 192 ; Saunders, p. 522). Four races of this species inhabit west, east, north-east, and south Africa.]

FAMILY RALLIDÆ.

Mostly small or medium sized birds, schizognathous but holorhine, 14–15 cervical vertebræ. Sternum as a rule long and narrow, with only one incision on each side. No basipterygoid processes. Aquintocubital. Contour feathers with small after-shafts. Rectrices about 10–14, mostly 12. Body more or less obviously laterally compressed. Wings generally short and rounded. A distinct sharp claw at end of thumb-bone. Oil-gland feathered. Hallux always present. Toes generally long. Chicks nidifugous, wing-bones as a rule very strongly developed and very little covered with down. Subdivision into subfamilies arbitrary and of no value. Cosmopolitan, a number of more or less flightless forms on oceanic islands.

Key to genera of Family RALLIDÆ.

- | | | |
|---|---|------------------|
| 1 | { Bill as long as middle toe with claw or longer | <i>Rallus</i> |
| | { Bill shorter than middle toe with claw | 2 |
| 2 | { Toes laterally lobed | <i>Fulica</i> |
| | { Toes not laterally lobed | 3 |
| 3 | { Bill stronger, height of bill at base more than half length of bill, quills cinnamon-red | <i>Crex</i> |
| | { Bill less strong, height of bill at base less than half length of bill, quills not cinnamon-red | 4 |
| 4 | { Middle toe without claw at least 1 cm. longer than tarsus, adults with bare red shield on fore-head | <i>Gallinula</i> |
| | { Middle toe without claw if at all only a few mm. longer than tarsus, no bare frontal shield | <i>Porzana</i> |

Genus **CREX** Bechst.

CREX Bechstein, Orn. Taschenb. Deutschl., II, p. 336 (1803—Monotype : *Crex pratensis* Bechst. = *Rallus crex* L.).

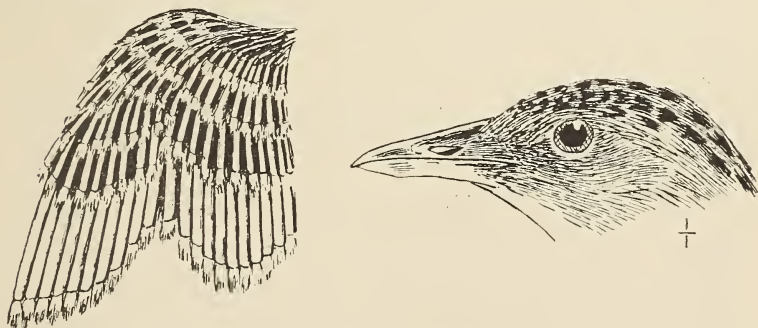
Differs from other European Rails in its high strong bill. Wing rather pointed for a Rail, 1st primary equalling 5th or 6th, 2nd longest. Tarsus about as long as middle toe with claw, or little longer. Quills cinnamon-red. More usual on dry ground, less in swampy places. Only one species.

CREX CREX477. *Crex crex* (L.)—THE LAND-RAIL.

RALLUS CREX Linnaeus, Syst. Nat. ed. x, i, p. 153 (1758—Europe. Restricted typical locality : Sweden).

Crex pratensis Bechstein, Yarrell, III, p. 137 ; Saunders, p. 507.

DESCRIPTION.—*Adult male. Winter.*—Feathers of whole upper-parts with large black centres and yellowish-brown fringes, which are more or less tinged grey ; stripe over eye and extending along sides of nape and usually small stripe under ear-coverts grey-blue ; lores, ear-coverts and sides of neck buff-brown ; chin and upper-throat dull white ; rest of throat and breast brown-buff, tinged varying amount of blue-grey ; lower-breast and belly buffish-white ;



The Land-Rail (*Crex crex*). Head of adult, summer. Wing in moult to show all feathers growing simultaneously.

sides, flanks and under tail-coverts chestnut-brown, feathers tipped and barred to varying extent dull white ; axillaries and under wing-coverts pinkish-chestnut, those round edge of wing white ; tail as upper-parts ; primaries and secondaries with outer webs and tips chestnut-brown and inner webs brown, outer web of outer primary buffish-white, innermost elongated secondaries as well as innermost greater and median wing-coverts as upper-parts ; primary-coverts dark brown tinged chestnut ; rest of wing-coverts brownish-chestnut,

median and greater with varying amount of narrow whitish bars, sometimes reduced to small "ticks" along edges of feathers and occasionally absent. This plumage is acquired by complete moult, which is very rapid, all wing-feathers, wing-coverts and tail being shed simultaneously, Aug.-Sep., occasionally not quite finished Oct. *Summer*.—A moult apparently usually confined to body-feathers and tail but sometimes involving some wing-coverts takes place Dec.-March. Plumage like winter but feathers of upper-parts with greyer fringes, grey-blue stripe over eye wider, sides of chin and throat and breast with considerable grey-blue tinge, varying and often with little buff-brown.

Adult female. Winter and summer.—Like adult male but in winter usually with only a tinge of blue-grey over eye and none below, in summer with less grey-blue on sides of head and throat and breast but varying somewhat.

Nestling.—Covered with longish down with fine, silky tips. Whole bird sooty brown-black, tips of down on upper-parts buff-brown but on head and under-parts rather blacker. This down is replaced by juvenile feathers which commence to grow when bird is very small; down only clings to tips of feathers just when they begin to sprout and is shed very quickly. Thumb with rather strong claw.

Juvenile.—Like adult winter female but over eye buff-brown without grey, all upper-parts with edges of feathers more buff-brown without grey tinge, throat and breast more yellowish buff-brown and without grey tinge, flanks more rufous and less barred brown, wing-coverts sometimes without bars and usually less barred than adult.

First winter.—The juvenile body-feathers appear to be moulted Sept.-Oct. and bird becomes like adult but is perhaps usually less blue-grey on throat and breast.

Measurements and structure.—♂ wing 135-150 mm., tail 40-50, tarsus 34-43, bill from feathers 20-23 (15 European measured). ♀ wing 130-145, bill 19-23. Primaries: 2nd longest, 3rd as long or 1-5 mm. shorter, 1st 8-14 shorter, 4th 2-10 shorter, 5th 8-15 shorter; outer web of 1st very narrow and slightly serrated along its edge, rest of primaries broad with tips rather square. Outer secondaries rather shorter than 10th primary, tips rounded, innermost elongated and reaching almost or quite to tip of wing. Tail much rounded, narrow and arched, 12 soft and narrow feathers, tips rounded. Tarsus somewhat thick, toes long and slender, claws small and slightly arched. Tibia bare for short distance above joint. Bill rather stout and compressed, broader at base and tapering to point, ridge of culmen narrow, gonys short. Nostrils short and slit-like in a large nasal groove. Feathers on fore-head with shafts somewhat thickened, stiff and bristle-like.

Soft parts.—Bill pale brown, tip darker, under mandible more flesh-colour; legs and feet pale flesh; iris pale brown.

CHARACTERS.—No subspecies. Buff under-parts, chestnut wing-coverts and absence of white marks on upper-parts distinguish it from other British Crakes.

FIELD-CHARACTERS.—Haunts rough pastures and low-lying meadows, where its compressed body enables it to travel quickly through growing grass. If hard pressed will fly sluggishly for a few yards with dangling legs, when its yellowish-buff body-plumage and chestnut wings are unmistakable, but the presence of this skulking bird is usually revealed by call of male, a loud rasping dissyllabic and long maintained “aerp-aerp,” uttered in spring and early summer by day and night. Other notes are growling and grunting cries, and when young are threatened a piercing hawk-like scream of defiance.

BREEDING-HABITS.—Haunts grassy meadows and in north pastures but not cornfields. *Nest*.—In long grass or rank weeds, nettles, flags, etc., where grass provides insufficient cover, consisting of a pad of dead grasses. *Eggs*.—Usually 8 to 12 but 13, 14, and even 18 on record; pale greenish-grey to light reddish-brown in ground with spots and blotches of warm red-brown and ashy-grey. Average of 100 eggs, 37.26×26.75 . Max. : 41.6×25.9 and 38.3×29 . Min. : 34×25 and 34.3×24.1 mm. *Breeding-season*.—During second half May and early June, but fresh eggs have been found late in July and even in August. *Incubation*.—By female alone. Period 17 days (in confinement). Probably single brooded normally; late dates may be due to destruction of early clutches.

FOOD.—Mainly animal matter though seeds of rushes and *Spergula* and fragments of weed have been recorded. Insects, including coleoptera (weevils, longicorn beetles, etc.); diptera and their eggs and orthoptera (*Forficula*, *Acridium*, etc.); also arachnida (*Epeira*); mollusca (*Helix* and *Limax*); horse-leech (*Hirudo*) and *Julus terrestris*.

DISTRIBUTION.—*British Isles*.—Summer-resident and passage-migrant 3rd week April to end May (early dates March 14, 1911, Glamorgan; Mar. 21, 1911, Somerset); 4th week Aug. to end Oct., and often Nov., while one or two recorded in winter most years, especially Ireland and O. Hebrides. Widely distributed in summer even to remote islands but has much decreased in England and is now scarce as breeding-bird from Devon to Lines., including south-east midlands (and especially so in E. Anglia and south coast counties); decreased south Wales, west of England, midlands to foot of Pennines and Yorks. moors, but throughout Pennine region and to west of it decrease scarcely appreciable (cf. *Brit. B.*, VIII, pp. 83–92).

DISTRIBUTION.—*Abroad*.—Greater part of Europe, from Scandinavia, Færoes to Pyrenees, North Italy, and Macedonia, eastwards to Russia, W. Siberia, Lena, and central Asia, in winter in Africa, Arabia, and (rare) N. India. Casual Madeira, Canary Is., United States, Greenland, Bermudas, once Australia, once New Zealand.

Genus PORZANA Vieill.

PORZANA Vieillot, *Analyse nouv. Orn. élém.*, p. 61 (1816—Monotype Buffon's Marouette=*Rallus porzana* L.).

Small to medium sized Rails with bills short (only as long as head or shorter), and fairly strong but not so strong and high at base as in *Crex*. Middle toe with claw longer than tarsus. Many species in all countries.

Key to species of genus PORZANA.

- | | | |
|-----|--|-----------------------------|
| 1 { | Under tail-coverts uniform | 2 |
| | Under tail-coverts barred or spotted | 3 |
| | Inner webs of inner secondaries like outer, edged with white | <i>P. carolina</i> , p. 832 |
| 2 { | Inner webs of inner secondaries lighter than outer, without white edges | <i>P. porzana</i> , p. 830 |
| 3 { | Smaller, longest secondaries not more than 1.5 cm. shorter than primaries, first primary with white outer edge | <i>P. pusilla</i> , p. 837 |
| | Larger, longest secondaries at least 2.5 cm. shorter than primaries, first primary without definite white outer edge | <i>P. parva</i> , p. 834 |

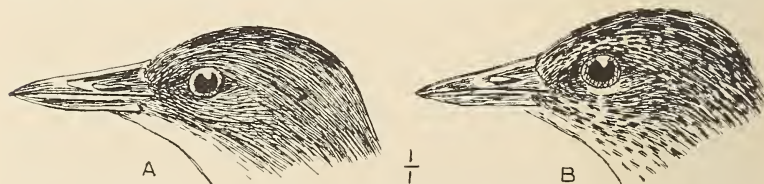
PORZANA PORZANA

478. *Porzana porzana* (L.)—THE SPOTTED CRAKE.

RALLUS PORZANA Linnæus, *Syst. Nat.*, ed. XII, i, p. 262 (1766—Europe. Restricted typical locality : France).

Porzana maruetta (Leach), Yarrell, III, p. 143 ; Saunders, p. 509.

DESCRIPTION.—*Adult male. Winter.*—Feathers of whole upper-parts with large black centres and greenish-brown fringes, and except on centre of crown, sides of feathers with white spots, small on back of neck and upper-mantle but forming short narrow streaks on rest of upper-parts and long streaks on scapulars ; stripe from base of upper mandible, over eye and down sides of nape tinged slate and thickly spotted white except on fore-part which is clearer



Adult, winter, of—A. Carolina Crake (*Porzana carolina*). B. The Spotted Crake *P. porzana*.

slate and scarcely spotted ; lores dusky ; ear-coverts brown mottled buff-brown ; chin whitish more or less mottled dull slate ; lower-throat brown tinged slate and spotted white ; breast and sides same but feathers with penultimate narrow bars of white as well as spots at tips ; flanks darker with broader white bars and spots ; centre of belly buffish-white ; under tail-coverts buff ; axillaries grey-black barred white ; inner and lower under wing-coverts same but upper and outer ones white ; tail as upper-parts

but without white spots ; primaries dark brown, outer web of outer mostly white but of rest greenish-brown and 2nd sometimes with a little whitish freckling ; secondaries greyer-brown, inner sometimes with white freckling on outer webs, innermost long ones like upper-parts but inner webs uniform brown and outer webs with widely spaced, narrow, zigzag white bars ; primary-coverts dark brown, edged greenish-brown ; wing-coverts greenish-brown, sides of feathers with widely spaced, narrow, transverse streaks (spot-like on outer and extending to bars on inner feathers) of white margined with black, uppermost lesser coverts white. This plumage is acquired by complete moult July to Oct. N.B.—Apparently moult is rapid as in Land-Rail but no example in wing-moult examined, though one in heavy body-moult has lost all but three tail-feathers. *Summer*.—A moult apparently confined to body-plumage takes place Dec. and occasionally not complete April. N.B.—Few actually in moult examined. As winter but stripes over eyes and down sides of nape much purer slate-blue and spotted only on posterior portion ; lores blackish-slate ; chin and throat slate-blue, spotted only at extreme sides ; breast more tinged slate and less brown.

Adult female. Winter.—Like male and often indistinguishable but usually less tinge of slate on eye-stripes, chin more streaked brown and breast less tinged slate. *Summer*.—Eye-stripe more spotted white than male and throat not so uniform slate but usually more or less mottled whitish.

Nestling.—Covered with longish down with fine silky tips. Whole bird black with tips of down glossed greenish on head, throat and upper-parts but gloss only faintly noticeable on under-parts. Thumb with rather strong claw.

Juvenile.—Like adult winter female but breast buffish-brown with few white spots.

First winter.—The juvenile body-feathers appear to be moulted in autumn and both sexes become like adult winter female but eye-stripes rather more spotted.

Measurements and structure.—♂ wing 113–125 mm., tail 43–49, tarsus 30–37, bill from feathers 18–21 (16 measured). ♀ wing 109–120, bill 16–20. Primaries : 2nd and 3rd longest, 1st 9–15 mm. shorter, 4th 2–5 shorter, 5th 6–11 shorter. Rest of structure as in *Crex crex* but bill finer and gonys longer and gently sloped, extreme base of culmen slightly swollen in adult, innermost secondaries shorter (reaching about 5th primary), tarsus and toes rather more slender and latter proportionately longer.

Soft parts.—Bill : basal half yellow shading to orange-red at base of culmen, rest green, tip brown (brighter in summer) ; legs and feet pale olive-green ; iris bright brown.

CHARACTERS.—No subspecies. For differences of *P. carolina* see under that species. Distinguished from other British Crakes by its white-spotted head and neck and also by being larger than Little and Baillon's Crakes.

BREEDING-HABITS.—Haunts marshes and undrained river-banks. *Nest*.—Usually in a clump or tussock of sedge or marsh-grass, built of coarse vegetable matter with lining of grasses. *Eggs*.—8 to 12 as a rule, exceptionally ranging to 15. Olive-buff in ground with purplish-brown and ashy-grey blotches and spots. Average of 100 eggs, 33.62×24.57 . Max. : 37.5×24.8 and 33×26.8 . Min. : 29.1×23 and 32×22.2 mm. *Breeding-season*.—May to early June in Central Europe ; up to July in Finland. *Incubation*.—Apparently shared by sexes as male has been recorded incubating. No reliable information as to period. Probably single brooded normally.

FOOD.—Includes both animal and vegetable matter. Insects : coleoptera (*Otiiorhynchus*, etc.) ; odonata (*Agrion*), lepidoptera larvæ, and also larvæ of *Phryganeidæ*, etc. Mollusca, chiefly small univalves (*Bithynia*, *Limnæa*, etc.). Vegetable matter includes seeds of *Ranunculus*, *Comarum*, *Polygonum*, *Sparganium*, *Panicum*, etc., and fragments of aquatic plants.

DISTRIBUTION.—*British Isles*.—Rare summer resident and scarce passage-migrant (March-May and Aug.-Nov.), occasionally wintering. Now rarely recorded breeding but probably still does so occasionally in some southern English counties and in East Anglia (Gurney estimated three broods Norfolk, 1918), Trent Valley, Yorks, and Brecon and possibly elsewhere. Formerly bred more commonly and as far north as southern Scotland (bred Roxburgh, 1912), but Elgin record unlikely. Scarce autumn-migrant except in north-west and north Scotland where very rare, once Hebrides, rarely Orkneys and Shetlands. In Ireland uncommon autumn, occasional winter-visitor. Bred (apparently commonly) Roscommon about 1851, apparently young bird taken Kerry and heard calling several nights Waterford, May, 1900.

DISTRIBUTION.—*Abroad*.—Europe from Norway and Finland to Mediterranean and larger Mediterranean Islands, possibly (?) N.W. Africa ; east to W. Siberia and Altai, south to Gilgit in N.W. India. Migratory, in winter south to Madeira, Canary Is., S. Algeria, eastern Sudan, and Abyssinia, E. and (twice) S. Africa, India from Sind to Arrakan. One Greenland.

PORZANA CAROLINA

479. *Porzana carolina* (L.)—THE CAROLINA CRAKE.

RALLUS CAROLINUS Linnaeus, Syst. Nat., ed. x, i, p. 153 (1758—N. America. Restricted typical locality : Hudson Bay).
Porzana carolina, Yarrell, III, p. 147 (in text) ; Saunders, p. 510 (in text) ; Lort Phillips, Bull. B.O.C., XII, p. 26.

DESCRIPTION.—*Adult male*. *Winter*.—Fore-head, lores, round anterior part of eye, chin and stripe down centre of throat black ; broad stripe over eyes joining across fore-part of crown extending down sides of nape and sides of throat ashy slate-grey, with ill-defined greenish-brown stripe from back of eye through ear-coverts ; crown and nape brown with broad black median stripe ; back of

neck brown to greenish-brown streaked black and occasionally with a few white spots; mantle and scapulars with wider black streaks and edges of feathers streaked white; back, rump and upper tail-coverts black margined brown with only occasionally a few white spots; black down centre of throat sometimes mottled grey; breast slate, lower feathers narrowly barred and tipped to varying extent white and dusky-black; sides and flanks brown with broad white bars margined black; centre of breast and belly white; tips of lower flank-feathers buff; under tail-coverts buff, but longer feathers white; axillaries brown-black barred white; under wing-coverts grey-black barred and tipped white, showing all white along edge of wing; tail-feathers as upper-parts with often a little white edging on central feathers; primaries and secondaries as *Porzana porzana*, but innermost long secondaries with narrow lines of white margined black down their sides and a few incomplete bars; inner greater and median wing-coverts similarly lined and a few in middle with spots or incomplete bars of white margined black, rest of coverts and all lesser uniform brown. This plumage is acquired by complete moult (wing- and tail-feathers are moulted simultaneously) July-Sept., occasionally commencing June. *Summer*.—The body-plumage is again moulted Jan. to Mar. sometimes commencing Dec., but wing-feathers and coverts are not moulted and not as a rule tail-feathers though sometimes one or two are moulted. As winter but black stripe down throat unbroken and broader than usual in winter.

Adult female.—Like adult male but black on fore-head and lores not so intense; black stripe down throat much reduced in length and width especially in winter; back and rump and especially wing-coverts often more spotted with white.

Nestling.—Like that of *Porzana porzana*.

Juvenile. Male and female.—Like adults but with no slate-colour and upper-parts warmer brown with less greenish tinge; black stripe in centre of crown extending to base of bill and margined on each side with uniform brown; lores and sides of head paler buffish-brown; chin and centre of throat whitish with buff tinge and sometimes buff marks; sides of throat and breast buff with slate-grey bases of feathers not entirely concealed; flanks browner than in adult and white of bars tinged grey or buffish.

First winter.—Varying considerably individually, most birds generally like juvenile with varying amount of slate on breast, a few black-tipped feathers on chin, some slate on sides of head; many like juvenile except for a little slate on breast; a very few become almost like adult. The juvenile body-plumage is moulted to a varying extent and very gradually July to Dec., but not wing-feathers, wing-coverts or tail. *First summer*.—Appears to become like adult after moult but probably those birds with less black on chin and throat are first summer.

Measurements and structure.—♂ wing 104–117 mm., tail 46–53, tarsus 30–38, bill from feathers 19–22 (12 measured). ♀ wing

99-112, bill 18-22. Primaries : 2nd and 3rd longest, 1st 10-14 mm. shorter, 4th 1-5 shorter, 5th 5-9 shorter. Other structure as in *Porzana porzana*.

Soft parts.—Bill (ad. winter) yellow, tip green, (juv. and 1st winter) yellowish-green, tip brown ; legs and feet green ; iris brown.*

CHARACTERS.—No subspecies. Distinguished from *Porzana porzana* in adult by unspotted slate sides of head and throat and black forehead and throat, in juvenile by unspotted white throat, buff breast, uniform brown sides of crown with black median stripe and unspotted neck, and from other British Crakes by size and black stripes on head.

BREEDING-HABITS.—A marsh-haunting species, but not confined to large swamps. *Nest*.—Built of weeds and grass. Almost always in a clump of vegetation growing in water, sometimes neatly built but not invariably. *Eggs*.—6 to 12 or even up to 15 in number, brownish buff, spotted rather sparingly with red-brown and purplish : darker than those of Virginian Rail. Size varies from 33.5 to 30.4 in length and 24.1 to 21.5 mm. in breadth. *Breeding-season*.—From mid-May onward. *Incubation*.—No details.

FOOD.—Aquatic insects, small mollusca, crustacea and seeds. (Hatch.)

DISTRIBUTION.—*British Isles*.—Five. Near Newbury (Berks.), Oct., 1864 (Saunders, p. 510). Near Cardiff, 1888 (*Birds Glamorgan*, p. 113). Male Tiree (I. Hebrides), Oct. 25, 1901 (E. Lort Phillips, *Bull. B.O.C.*, XII, p. 26). Male immature Ness, Lewis (O. Hebrides), Nov. 12, 1913 (W. R. Ogilvie-Grant, *Brit. B.*, VII, p. 202). Male adult Slyne Head Lt. (Galway), April 11, 1920 (C. J. Patten, *Irish Nat.*, 1920, p. 59). Also an immature bird captured at sea 100 miles off west Ireland (C. Borrer, *Brit. B.*, XIII, p. 298).

DISTRIBUTION.—*Abroad*.—Breeds in N. America, winters from California and S. Carolina through West Indies and Central America to S. America, accidental in Bermudas and Greenland.

PORZANA PARVA

480. *Porzana parva* (Scop.)—THE LITTLE CRAKE.

RALLUS PARVUS Scopoli, *Annus 1 Historico-Natur.*, p. 108 (1769—Carniola).

Gallinula Foljambei Montagu, *Suppl. Orn. Dict.*, under "Gallinule—Olivaceous" (1813—Norfolk).

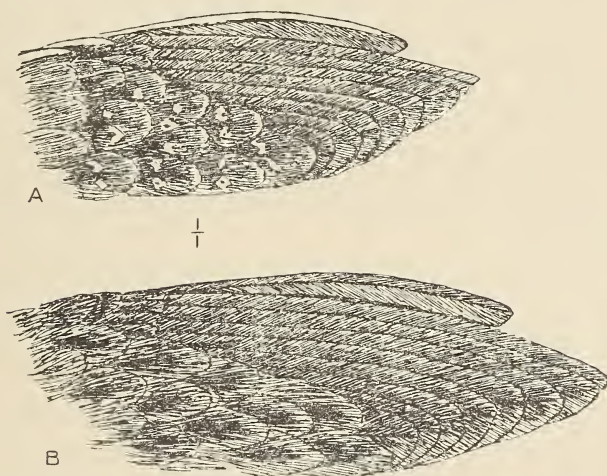
Ortygometra olivacea Stephens, *Shaw's Gen. Zool.*, XII, i. p. 226 (1824—New name for *Gallinula Foljambei*).

Porzana parva (Scopoli), *Yarrell*, III, p. 148 ; *Saunders*, p. 511.

DESCRIPTION.—*Adult male. Winter*.—Centre of fore-head and crown and back of neck olive-brown, feathers of crown sometimes with

* Prof. C. J. Patten states (*Ibis*, 1923, p. 122) that an adult male obtained in April had the tip of the bill rich carmine and the iris ruby-red.

brown-black centres ; mantle black, feathers edged olive-brown and with long white spots on distal portions of outer webs, forming ill-defined white lines down mantle ; scapulars same but with narrow black centres ; back as mantle but feathers edged darker and less olive-brown ; rump and upper tail-coverts brown as back but with no white spots ; sides of fore-head, stripes over eyes, whole of sides of head and neck and under-parts slate, feathers narrowly tipped buff, chin ashy-white, feathers of lower flanks and vent tinged brown and tipped white with narrow blackish penultimate bars ; under tail-coverts blackish-slate, tipped and often barred white and outer feathers with outer webs mostly brown ; axillaries and under wing-coverts dull slate tinged brown ; tail-



Wings of—A. Baillon's Crake (*Porzana pusilla intermedia*). B. The Little Crake (*P. porra*).

feathers with brown-black centres and brown tips and edgings ; primaries and secondaries and primary-coverts dark brown, outer webs of primaries tinged olive-brown, innermost secondaries and innermost greater coverts with black centres and olive-brown tips and edgings ; rest of wing-coverts olive-brown with blackish bases. This plumage appears to be acquired by complete moult (probably July-Sept.) but no specimens actually in moult are available for examination. *Summer*.—The body-feathers are moulted, probably only partially, Jan. and perhaps Dec. Plumage like winter but slate eye-stripes broader, under-parts almost uniform slate without buff fringes, chin slate or mixed with ashy.

Adult female. Winter.—Like adult winter male but brown of crown extending broadly to centre of fore-head ; sides of fore-head, lores, eye-stripes and sides of head pale, dull slate, a small spot of pale brown at anterior edge of eye and ear-coverts mostly pale brown ; sides of neck pale brown ; chin and throat grey-white ;

lower-throat, breast, sides and upper belly pinkish-buff to brownish-buff; lower flanks, vent and under tail-coverts barred much as male but more buffish-brown; axillaries and under wing-coverts dark slate-brown sometimes with some small whitish spots; sometimes slight white edging on outer primary; upper wing-coverts as male but greater coverts usually with some white spots. *Summer*.—As winter but slate of lores, round eyes and eye-stripes purer and eye-stripes broader and less brown on ear-coverts.

Nestling.—Like that of *P. porzana* with the green gloss rather stronger on upper-parts and throat.

Juvenile.—Upper-parts as adult female; lores, eye-stripes and sides of head and neck buffish-white speckled brown; ear-coverts with patch of brown; under-parts buffish-white, chin and centre of throat whiter and uniform and centre of belly mostly uniform but rest of under-parts mottled brown, feathers being tipped dark brown and flanks and under tail-coverts strongly barred brown and black-brown; wings as adult but more spotted, under wing-coverts and greater coverts and some median upper coverts having varying number of white spots (varying in size), often small white spots at tips of primaries and near tips of primary-coverts but sometimes these feathers are unspotted; sometimes slight white edging to outer primary.

First winter and summer.—The juvenile plumage does not appear to be moulted before Nov. After moult like adult but males browner on flank-feathers and more buff tips on under-parts and some small white spots on wing-coverts; females with lores and eye-stripes duller slate-grey and under-parts paler buff than in adults.

Measurements and structure.—♂ wing 102–110 mm., tail 50–57, tarsus 28–32, bill from feathers 16.5–19 (12 measured). ♀ wing 95–106, bill 16–18. Primaries: 2nd and 3rd longest, 1st 14–17 mm. shorter, 4th 3–7 shorter, 5th 8–12 shorter. Rest of structure as in *Porzana porzana* but innermost secondaries shorter (reaching 8th or 9th primaries), tarsus and toes proportionately longer and culmen not swollen at base.

Soft parts.—Bill (ad.) pale grass-green, tip greyish, base of upper mandible at gape red; legs and feet green; iris and orbital ring crimson.

CHARACTERS.—No subspecies. Smaller than other British Crakes except Baillon's, for distinctions of which see under "Characters" in that species.

BREEDING-HABITS.—Haunts marshes, unreclaimed banks of streams and ponds. *Nest*.—Well concealed in tussock of grass, flags or sedge in wet place, built of sedges, rushes, etc., and lined finer grasses. *Eggs*.—Usually 7–8, occasionally 9–11, ochreous in ground-colour and covered with numerous fine brown spots, not so glossy as those of Baillon's Crake and as a rule lighter in colour and larger. Average size of 100 eggs, 30.45×21.73 . Max.: 33.5×23 . Min.: 28×19 mm.

Breeding-season.—From mid-May onward in Central Europe. Probably normally single brooded, but late nests may be found in July.
Incubation.—No details as to period or share of sexes.

Food.—Chiefly insects, especially coleoptera, but also diptera and their larvæ, orthoptera, neuroptera and many aquatic species such as *Hydrometra*, *Hydrachna*, etc. Also mollusca (*Planorbis*, *Bithynia*, *Ancylus*, *Valvata*, etc.). Seeds occasionally recorded.

DISTRIBUTION.—*British Isles*.—Vagrant. *England*.—About forty, as follows: Yorks. (five), Lincs., Norfolk (eleven), Suffolk, Cambs., Middlesex, Oxon., Surrey (possibly), Sussex (six), Hants. (four), Dorset (two), Somerset, Devon (several), Cornwall, Salop, Lancs., Cumberland (two). *Scotland*.—Two or three. Banff, March, 1852, Ayr, March, 1909. One seen Argyll, Sept., 1911. *Ireland*.—Two. co. Dublin, March, 1854, Kildare, Nov., 1903.

DISTRIBUTION.—*Abroad*.—Breeds from N. Germany and central Russia to S. Europe. Eastward appears to breed as far as Persia and Turkestan. Generally migratory, wintering in Mediterranean countries (exceptionally central Europe), and N. Africa, Arabia, Mesopotamia, N.W. India. Said to have nested in S. Sweden; casual Heligoland, Canary Is., Azores; a skin in British Museum said to be from Uganda.

PORZANA PUSILLA

481. *Porzana pusilla intermedia* (Herm.)—BAILLON'S CRAKE.

RALLUS INTERMEDIUS Hermann, Obs. Zool., I, p. 198 (1804—Strassburg)
Porzana bailloni (Vieillot), Yarrell, III, p. 154; Saunders, p. 513.

DESCRIPTION.—*Adult male*. *Winter*.—Centre of fore-head and crown and back of neck reddish-brown, feathers of crown with blackish centres and sometimes narrow median streaks on back of neck; feathers of rest of upper-parts with reddish-brown fringes and large black centres spotted or streaked with white more or less mottled black; sides of fore-head, lores, eye-stripes, sides of head and neck, lower-throat and breast slate; chin and centre of upper-throat ashy-white; sides of breast reddish-brown sparsely spotted and streaked black and white; belly and tibial feathers blackish-slate narrowly barred white; flanks and under tail-coverts black barred white; axillaries and under wing-coverts grey-brown, tipped greyish-white, round edge of wing white; tail-feathers black, fringed reddish-brown; primaries dark brown, outer webs paler, outer feathers with narrow uneven white edging, inner feathers often with some small white spots; secondaries dark brown with varying number of mottled white spots or streaks, inner feathers as upper-parts; primary-coverts dark brown occasionally with one or two minute white spots; outer feathers of bastard-wing edged white; greater coverts and sometimes a few median as upper-parts; rest of median and most of lesser almost uniform reddish-brown with only small dark centres and no white spots but lesser along bend

of wing streaked white. Scarcely any birds in moult are available but there appears to be a complete moult in autumn or late summer and a partial one (but including, at all events sometimes, whole tail) early in year and sometimes as late as April. *Summer*.—As winter but chin pale slate instead of whitish.

Adult female. Winter.—As male but with more white on throat and feathers behind eye usually tipped brown making an indistinct and broken stripe. *Summer*.—Chin and centre of throat ashy much as male in winter.

Nestling.—Like that of *P. parva*. Down is replaced by juvenile feathers to tips of which it clings for very short time.

Juvenile.—Upper-parts as adult ; lores, eye-stripes, sides of head and sides of neck buff-brown mottled or speckled darker brown or blackish ; chin and upper-throat white ; lower-throat and breast whitish-buff, more or less heavily barred dark brown but sometimes bars almost obsolete ; centre of breast buffish-white usually unmarked ; flanks and under tail-coverts browner not so black as in adult but barred white ; rest of plumage as adult but wings sometimes more spotted white though often no more so than in adult.

First winter.—The juvenile body-plumage is very partially moulted Oct.–Nov. *First summer*.—Apparently like adult but no moulting birds available.

Measurements and structure.—♂ wing 87–94 mm., tail 38–46, tarsus 27–29, bill from feathers 16.5–18 (8 measured). ♀ wing 85–93, bill 15–17. Primaries : 2nd and 3rd longest, 1st 10–15 mm. shorter, 4th 1–4 shorter, 5th 4–7 shorter. Rest of structure as in *P. parva* but secondaries longer reaching 6th or 7th primaries.

Soft parts.—Bill green, blackish along ridge of culmen ; legs and feet olive-green ; iris red.

CHARACTERS AND ALLIED FORMS.—*P. p. pusilla* (N. Asia) has paler (more ashy) under-parts and prominent brown stripe through lores and ear-coverts ; other forms occur in S. Africa (*P. p. obscura*) and N. Zealand (*P. p. affinis*). Smallest of British Crakes, inner secondaries longer and upper-parts more reddish and less olive-brown than in *P. parva* and with more spots and streaks of white which are mottled black, edge of wing always white, female with breast slate not buff, juvenile with breast more barred.

BREEDING-HABITS.—Haunts lagoons and shallows of lakes with thick growth of vegetation. *Nest*.—A neatly rounded cup of dead leaves of reed or aquatic grasses, sometimes low down in thick growth of sedge occasionally as much as a foot or two from water-surface in *Salicornia* bush, but always cleverly concealed from above. *Eggs*.—Usually 6 to 8, somewhat elongated in shape, with high gloss, ochreous, finely stippled and spotted with yellowish-umber. Average of 75 eggs, 29.06 × 20.66. Max. : 31 × 21.9 and 30.7 × 22. Min. : 25.3 × 19.5 and 27.2 × 19 mm. *Breeding-season*.—From latter part April onward in S. Europe, but as many nests are destroyed fresh

eggs may be found till late in season. *Incubation*.—No details as to period or share of sexes.

Food.—Insects and their larvæ, especially coleoptera, but also diptera, and Phryganeidæ. Larvæ of gnats frequently met with, and vegetable matter, seeds, etc., in small quantities. Naumann includes small mollusca.

DISTRIBUTION.—*British Isles*.—Vagrant, but two nests and eggs found Cambs., June and Aug., 1858, also two, believed to be of this species, near Hickling (Norfolk), June and July, 1866, and one Sutton Broad (Norfolk), May, 1889. As vagrant has occurred chiefly Norfolk, but also Derby, Notts, Yorks., Suffolk, Essex, Herts., Kent, Sussex, Surrey, Hants., Dorset, Somerset, Cornwall, Pembroke, Carnarvon, Cheshire, Lancs., Cumberland, Durham, Isle of Man, Dumfries., Wigtown, Renfrew, Sutherland, Caithness, Cork, and Waterford. Chiefly spring and autumn, and exceptionally summer and winter.

DISTRIBUTION.—*Abroad*.—Central and southern Europe generally, north to Holland and central Germany, E. Prussia; N.W. Africa (Algeria) and probably Egypt, eastwards at least as far as Persia, also W. Africa and Madagascar. Passes Mediterranean countries on migration, and winters north and south of Sahara. Represented by allied forms in eastern and southern Africa, E. Siberia, N. India, and Japan, Australia and New Zealand.

[NOTE.—Examples of the PURPLE GALLINULE, *Porphyrio cœruleus* (Vandelli), the GREEN-BACKED GALLINULE, *Porphyrio madagascariensis* (Lath.), the INDIAN GALLINULE, *Porphyrio poliocephalus* (Lath.), and the AUSTRALIAN GALLINULE, *Porphyrio melanotus* Temm., have been captured from time to time, but these had probably escaped from captivity or semi-captivity (Yarrell, III, p. 170; Saunders, p. 518).]

[NOTE.—An example of Allen's Gallinule, *Porphyrio alleni* Thompson, Ann. and Mag. Nat. Hist., x, p. 204, 1842, a resident in tropical Africa and Madagascar which has occurred accidentally in N. Africa, Canary Islands, Azores, and south Europe, was captured alive on a fishing-boat off Hopton, near Yarmouth (Norfolk), Jan. 1st, 1902 (J. H. Gurney, *Zool.*, 1902, p. 98); it may have escaped from captivity, but the species occurred in the same year in Tunisia and Morocco, and has occurred in Sicily, Italy and Spain.]

Genus RALLUS L.

RALLUS Linnaeus, Syst. Nat., ed. x, i, p. 153 (1758—Type by subsequent designation, of Fleming, 1821, and Gray, 1840, *R. aquaticus*).

Differs from other European Rails in its almost straight, laterally compressed, long bill, which is as long as or a little longer than middle toe with claw. Tarsus shorter than middle toe with claw. Frontal feathers slightly stiffened. Wings moderately long, 1st primary between 6th and 8th, 2nd as a rule longest. Tail shorter than half length of wing. 12 species in Europe, Asia, America, Africa with Madagascar and Aldabra, not counting the closely allied *Hypotaenidia*. Only 1 species, in several subspecies, is Palearctic.

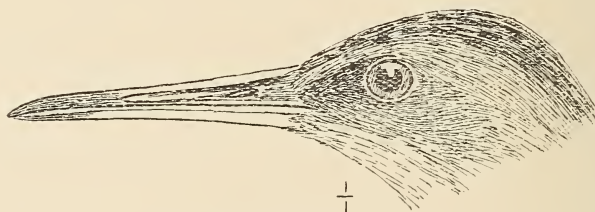
RALLUS AQUATICUS

482. *Rallus aquaticus aquaticus* L.—THE WATER-RAIL.

RALLUS AQUATICUS Linnæus, Syst. Nat., ed. x, i. p. 153 (1758—Europe.
Restricted typical locality : Great Britain).

Rallus aquaticus Linnæus, Yarrell, III, p. 159 ; Saunders, p. 515.

DESCRIPTION (Plate 13).—*Adult male and female. Winter.*—Feathers of whole upper-parts with large black centres and darkish olive-brown fringes ; lores blackish ; stripes over eye, sides of head and neck, throat and breast darkish slate ; apex of chin paler ash-grey or hoary ; feathers of centre of belly and tibial feathers blackish-slate tipped pale buff ; flank-feathers elongated, black with narrow white bars and buff tips ; under tail-coverts same but with long buff tips mostly obscuring black and lowest long feathers white tinged



The Water-Rail (*Rallus a. aquaticus*).

buff at tips ; axillaries black narrowly barred and tipped white ; tail as upper-parts ; primaries, primary-coverts and outer secondaries black, inner ones with outer webs edged olive-brown and innermost as upper-parts ; wing-coverts as upper-parts, narrow white line round edge of wing, on outer median coverts usually varying number of narrow white or whitish bars or spots but sometimes these are absent and sometimes very obscure. This plumage is acquired by complete moult July (sometimes even June) to Nov., wing- and tail-feathers appear to be moulted simultaneously as in *Crex crex* but no specimens showing this completely are available. *Summer.*—The body-plumage is moulted (probably only partially) March–April but not wings or tail. Like winter but both upper- and under-parts become rather paler by abrasion of feathers.

Nestling.—Like that of *Porzana porzana* and not to be distinguished except by shape of bill.

Juvenile.—Upper-parts as adult ; lores dusky with pale buff line from base of culmen becoming darker and mottled brown over eye ; sides of head and neck, lower-throat, upper-breast and sides of breast buff mottled brown, feathers being tipped brown ; chin and upper-throat buffish-white often mottled brown ; centre of breast and belly pale buff slightly mottled brown and with dull slate bases of feathers not entirely concealed ; lower-flanks barred pale

buff and dark brown ; under tail-coverts, tail, wings and wing-coverts like adult.

First winter. Male and female.—Like adult but chin whitish, ear-coverts tipped brown, feathers of breast and throat narrowly tipped buffish-white to white with a narrow brown subterminal bar and sometimes a considerable amount of brown wash on throat and breast, feathers of centre of breast usually fringed whitish, making a small narrow whitish patch. The juvenile body-plumage is moulted July to Nov. (sometimes not finished Dec.) but not tail- or wing-feathers nor wing-coverts and sometimes a certain number of juvenile body-feathers are retained. *Summer.*—Owing to abrasion of tips of feathers and probably a partial moult becomes more like adult.

Measurements and structure.—♂ wing 115–126 mm., tail 50–60, tarsus 39–45, bill from feathers 37–44 (12 measured). ♀ wing 109–116, bill 33–39. Primaries : 2nd and 3rd longest, 1st 15–20 mm. shorter, 4th 1–4 shorter, 5th 3–6 shorter, 6th 6–10 shorter ; feathers broad and tips rounded but that of outer more pointed. Outer secondaries about equal to inner primary, tips obtusely pointed, innermost as long as 5th to 7th primaries. Tail much rounded, narrow and arched, 12 rather soft and narrow feathers, tips sharply rounded. Tarsus compressed and strong ; toes long and slender, claws rather small and slightly arched. Tibia bare for about 10 mm. Bill rather slender and compressed from base to tip, almost straight, both mandibles tapering gradually to point, no angle noticeable. Nostrils slit-like about middle of long, narrow and rather deep groove. Feathers on fore-head with shafts somewhat thickened, stiff and bristle-like.

Soft parts.—Bill : culmen and distal half of lower mandible brown, basal half of lower and cutting edge at base of upper red ; legs and feet flesh-brown, sometimes washed greenish ; iris dull blood-red to bright red-brown.

CHARACTERS AND ALLIED FORMS.—*R. a. indicus* (E. Siberia, N. China, Japan) has paler brown edges to feathers of upper-parts, paler and more brownish under-parts and a brown stripe through ear-coverts ; *R. a. korejewi* (Turkestan, E. Persia) has upper-parts still paler than last but under-parts not so brown-tinged. Long slender bill distinguishes Water-Rail from Crakes.

FIELD-CHARACTERS.—Shy and secretive, a dweller in reed-beds and the coarse herbage of bogs and fens. If seen, walking with deliberate gait, in a ditch or water-cress bed or on margin of a pool, upright carriage, and flirited white tail-coverts, olive-brown back, dull slate neck and breast, black and white barred flanks, and long dull red and slightly decurved bill are evident enough, but usually one only has a momentary glimpse of bird as it bolts for cover on first alarm, running quickly with lowered head. Swims well, looking at a distance like a miniature Moorhen. Call, a sharp

“jik-jik-jik.” In breeding-season male supplements this cry by a loud piercing and explosive scream. A low groaning note is also uttered, and Miss Turner has described a continuous purring at the nest.

BREEDING-HABITS.—Haunts reed-beds, swamps, osier-beds, banks of rivers and lakes where there is thick aquatic vegetation. *Nest.*—Sometimes well concealed in thick vegetation, but at times among reed-stems close to water-surface in dense reed-bed and readily seen at close-quarters, though nests may be a foot or two above water hidden among dead broken-down reeds or sedge. *Eggs.*—Usually 6 to 11, though 16 are said to have occurred, not unlike those of Land-Rail, but paler and more sparsely marked, creamy-white with a few deep red-brown and bluish-ash spots, chiefly near large end—occasionally a blotch of brown. Average of 90 eggs, 35.44×25.75 . Max.: 39×25.5 and 35×27.3 . Min.: 31.9×25 and 36.8×24.1 mm. *Breeding-season.*—From early April onward to July. *Incubation.*—By both sexes, but apparently chiefly by female. Period unknown. Probably double brooded.

FOOD.—Varied, including small fish (Bullhead, *Cottus gobio*), worms, crustacea (small freshwater cray-fish), mollusca (*Planorbis*, *Bithynia*, *Helix*, *Pisidium*, *Zonites*, etc.); insects, including coleoptera (Hydradeptera, Geodeptera, *Bembidium*, *Halticus*, *Staphylinus*, etc.), neuroptera and larvæ, phryganeidæ and larvæ, orthoptera, and *Notonecta*; also horse-leech, as well as vegetable matter and seeds of *Centaurea*, *Carex*, etc. Oak “spangle” galls have also been found in crops.

DISTRIBUTION.—*British Isles.*—Resident, winter-visitor and passage-migrant (2nd week March to first, and occasionally 3rd, week May; 2nd week Sept. to 3rd week Nov.). Breeds most marshy districts, especially Norfolk and Ireland, but few records of nesting in Scotland (all south of Grampians), and has not bred Shetlands, and not for some years Orkneys. In winter commoner and more widely spread. Migratory movements, presumably due to weather, recorded Dec. to Feb. in some years. Passage-movements well marked all coasts Great Britain and Ireland, but especially on west coast Great Britain, where occurs in large numbers in some years, e.g. March, 1911. Migration autumn and spring on south coast England may indicate departure and return of some home-bred birds besides passage of some migrants.

DISTRIBUTION.—*Abroad.*—Europe generally, north as far as Iceland (practically resident), Scandinavia, and Petrograd, south to Mediterranean, N.W. Africa, and Egypt. Exact limit eastwards uncertain, but birds from N.E. Asia and eastern parts of India (in winter) are *R. a. indicus*, while form from Turkestan and E. Persia is *R. a. korejewi*. Winters partially Iceland to central Europe, but more in Mediterranean countries, Arabia, Persia, Turkestan, once N.W. India.

Genus GALLINULA Briss.

GALLINULA Brisson, Orn., I, p. 50 (1760—Type, according to VI, p. 2, by tautonymy "*gallinula*," i.e. *Gallinula chloropus*).

Toes extraordinarily long, middle toe with claw much longer than tarsus, not with lobes, but with a narrow strip of extended skin laterally. Adult with a red frontal shield. Only one Palæarctic species with a number of subspecies over greater part of world, and a few more particularized forms generally looked upon as species.

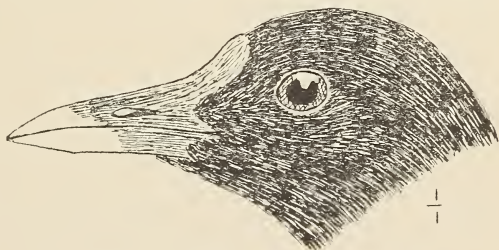
GALLINULA CHLOROPUS

483. *Gallinula chloropus chloropus* (L.)—THE MOOR-HEN.

FULICA CHLOROPUS Linnæus, Syst. Nat., ed. x, i, p. 152 (1758—Europe. Restricted typical locality : England).

Gallinula chloropus (Linnæus), Yarrell, III, p. 164 ; Saunders, p. 517.

DESCRIPTION.—*Adult male and female. Winter.*—Crown and nape blackish-slate slightly tinged brown ; neck encroaching on to upper-mantle bluer slate more or less washed brown ; rest of upper-parts dark glossy olive-brown ; sides of head, chin and throat blackish-slate (sometimes a few whitish spots on chin and throat) ; rest of under-parts dark slate, feathers of centre of breast lightly tipped white and those of centre of belly with longer white tips sometimes concealing basal part of feathers and making a white patch on belly but varying, flanks browner and with conspicuous long white stripes ; under tail-coverts white more or less tinged buff at



The Moor-Hen (*Gallinula ch. chloropus*).
Adult male, summer.

base, central feathers black ; under wing-coverts and axillaries brown tinged slate, narrowly tipped white (axillaries sometimes uniform) and round edge of wing a narrow white or creamy-white line ; tail-feathers as upper-parts but tips blackish ; primaries and secondaries black-brown, inner part of inner webs rather paler, outer edge (varying in width) of outer web of 1st primary white or brownish-white, innermost secondaries dark red-brown ; primary-coverts black-brown ; rest of wing-coverts as upper-parts but outer ones blacker and less olive-brown. This plumage is acquired by complete moult July to Oct. (occasionally not quite complete Nov.). All wing-feathers, wing-coverts and tail-feathers are moulted simultaneously though occasionally a feather here and there is retained until the

others are partially grown.* *Summer*.—A few feathers are moulted on head, neck and throat in April but this moult is only partial and perhaps not regular.

Nestling.—Closely covered with down with long, fine, hair-like tips except fore-head, crown, round eyes and gape where down is very sparse. Upper-parts black, glossed green, under-parts sooty brown-black, down on chin, sides of head and throat tipped white and coarse being enclosed with sheath but not to same extent as in Coot. Down is replaced by juvenile feathers to tips of which it clings. Thumb with rather strong claw curved at tip.

Juvenile.—Crown, nape and neck dark brown; rest of upper-parts as adult but rather more reddish and less olive; lores, under eyes and ear-coverts buff freckled dark brown, feathers being tipped dark brown; chin and throat dull white tinged buff; breast and sides brown tinged slate and feathers lightly tipped whitish to buffish, centre of breast with more white and belly with white tips mostly concealing slate-brown bases of feathers; flanks brown with buff to whitish-buff stripes varying in width and extent; axillaries, under and upper wing-coverts, wing-feathers and tail as in adult.

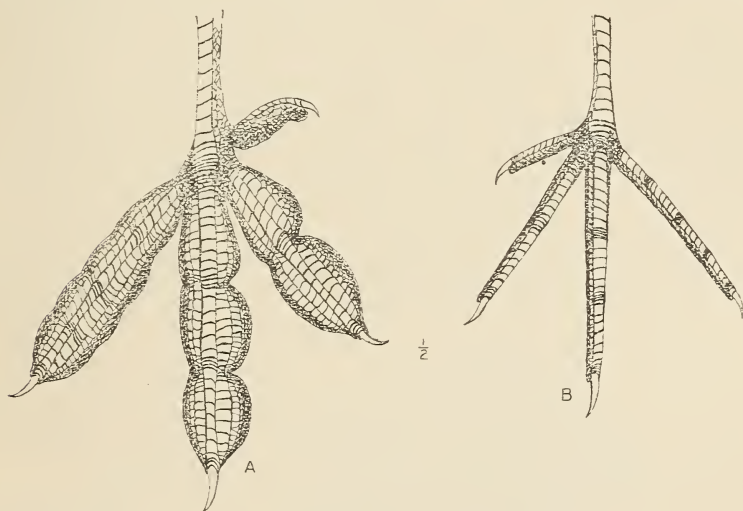
First winter.—Crown and neck dark brown with some dark slate showing at base of neck but feathers tipped dark olive-brown (whole head and neck thus much browner than adult); chin and throat with varying amount of dull white; rest of throat, sides and breast dark slate, feathers tipped buffish-brown to varying extent and with whitish fringes (in some slate almost concealed by buffish-brown tips); some stripes on flanks usually tinged buff. The juvenile body-plumage is moulted Aug.–Dec. (sometimes not finished Jan.) but wing-feathers, wing-coverts and tail-feathers are not moulted and sometimes some juvenile body-feathers are retained. N.B.—Occasionally tail is completely or partially moulted. *First summer*.—A partial moult of head, neck and throat takes place in April as in adult and this combined with abrasion of tips of feathers makes bird more like adult but under-parts and head are always browner and less uniform slate than adult.

Measurements and structure.—♂ wing 170–188 mm., tail 65–80, tarsus 48–53, bill from feathers on sides of upper mandible 25–29 (12 British measured). ♀ wing 166–175. Primaries: 2nd and 3rd longest, 1st 15–21 mm. shorter, 4th 2–7 shorter, 5th 7–12 shorter; outer web of 1st very narrow and slightly serrated. Outermost secondary shorter than 10th primary, tips pointed, innermost as long as 7th or 8th primary, tips rounded. Tail much rounded, 12 feathers, tips rounded. Under tail-coverts nearly as long as tail. Bill stout, compressed and tapering. At base of upper mandible an elliptical fleshy plate or “shield,” extending over centre of fore-head, larger in males than females, very small in juvenile and 1st winter and somewhat reduced in adults from Oct. to Dec. Nostril oblong

* Just before the moult a varying number of wing- and tail-feathers are broken off and this is so usual that it would appear to be done by the bird intentionally.—H.F.W.

in rather large nasal groove. About one-fourth of tibia bare ; tarsus compressed and strong ; toes very long and slender (hind one much smaller), membrane beneath dilated at sides ; claws strong, slightly curved, much compressed and sharp.

Soft parts.—(ad.) Bill and shield bright red, tip bright yellow (duller Oct. to Nov.) ; legs and feet green, yellowish on front of tarsus and on tibia which has red-orange "garter" ; iris crimson but sometimes red-brown. Fully grown juvenile and 1st winter bill and shield greenish-brown, legs and feet olive-green, "garter" yellowish, iris grey-brown. Colouring becomes like adult occasionally as early as Oct but usually between Dec. and March. Nestling



Feet of—A. The Coot (*Fulica a. atra*). B. The Moor-Hen (*Gallinula ch. chloropus*).

bill and shield bright pink, tip yellow gradually becoming duller when feathers begin to grow ; skin above eyes blue ; legs and feet black ; iris dark brown.

CHARACTERS AND ALLIED FORMS.—*G. ch. parvifrons* (India to China) is smaller. A number of other forms outside Palearctic region. Distinguished from other British Rallidæ by frontal shield and long toes not lobed.

FIELD-CHARACTERS.—Provided there be cover, resorts indifferently to lakes, pools, the smallest ponds, rivers, ditches and swamps. Usually feeds among rough herbage or in shallow water, but at times in open on grass-lands and even garden-lawns. Easily recognized by black plumage with oblique white stripes on flanks, white under tail-coverts, flirited when bird is alarmed or angry, green, red-gartered legs, and vermilion shield on fore-head—green in immature bird. Swims well with a characteristic bobbing action and dives upon occasion. Call, a loud sudden "prruk" ; female

calls young with a croaking "gok-gok." Often flies at night, calling "keck-keck-keck."

BREEDING-HABITS.—Found not only on all stagnant waters, and almost every small pond, but also nests freely by banks of rivers and streams. *Nest.*—Often among aquatic plants in water or near water's edge, but also frequently in thorn-bushes near water, or among branches of trees and has been known to use old nests of Rook, Magpie, Wood-Pigeon and Sparrow-Hawk, generally built of dead reeds, flags, sedge, etc. *Eggs.*—Usually 5 to 10, but occasionally up to 16, while 19 to 21 eggs have been found in one nest. Probably all records of over 14 eggs are due to two or more females laying together, as well as some of smaller numbers. Colour whitish-grey to buff or greenish with suffused red-brown spots and bluish-ash shellmarks. Average of 100 British eggs, 44.44×31.41 . Max. : 54×31.5 and 46.6×34.2 . Min. : 36.5×26.6 mm. *Breeding-season.*—Occasionally at beginning March, usually from April onward. *Incubation.*—Probably by both sexes, but more evidence desirable. Period variable ; usually 20–22 days but Kelso records 15–17 and once 28 days (last probably abnormal). Two or three broods.

FOOD.—Chiefly vegetable, but also to some extent includes animal matter. Grass, cereals, fruit (apple, plum, pear, blackberry, ivy, yew, hawthorn, rowan, sea-buckthorn, elder, etc.), also seeds of *Polygonum*, *Ranunculus*, *Potamogeton*, *Rumex*, *Sparganium*, fruits of *Nymphaea*, *Nuphar*, and seeds of several species of trees, including elm, and floating aquatic plants, such as duck-weed. Also worms, small mollusca, occasionally eggs and insects, including coleoptera, larvæ of lepidoptera, hymenoptera, diptera, neuroptera (*Phryganeidae*) ; also aphides and frog-hopper (*Philænus*).

DISTRIBUTION.—*British Isles.*—Resident. Generally distributed, but scarce in northern Shetlands. Subject to local movements, and some evidence of immigration and emigration in autumn, 1st week Oct. to early Dec., and immigration south and west coasts in spring, 1st week March to 2nd week April ; so probably a passage-migrant also, in small numbers.

DISTRIBUTION.—*Abroad.*—Europe generally, and N. Africa from Algeria and Morocco to Egypt, on passage in Atlantic Isles, eastwards to Turkestan and apparently Transcaspia. Casual Færoes and Iceland. Generally resident, but northern birds move southwards in cold weather, to Mediterranean countries. Replaced by allied forms in tropical Africa and Madagascar, greater part of Asia, America, Hawaiian and other islands.

Genus FULICA L.

FULICA Linnaeus, Syst. Nat., ed. x, i, p. 152 (1758—Type by Linnean tautonymy "*fulica*," i.e. *Fulica atra*).

At once recognizable by lateral lobes on toes, reminding one of those of *Podiceps*. Middle toe with claw considerably longer than

tarsus, latter with sharp edge at back. Claws very sharp and pointed, rather straight. Extended white frontal shield in adults. Tail short, rounded, in the European species 14, not rarely 16, rectrices. About a dozen forms in various parts of the globe.

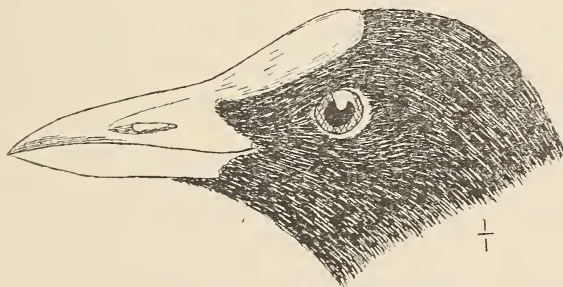
FULICA ATRA

484. *Fulica atra atra* L.—THE COOT.

FULICA ATRA Linnaeus, Syst. Nat., ed. x, i, p. 152 (1758—Europe. Restricted typical locality: Sweden).

Fulica atra Linnaeus, Yarrell, III, p. 171; Saunders, p. 519.

DESCRIPTION.—*Adult male and female. Winter and summer.*—Whole head and neck all round black, crown and back of neck glossy, chin and throat with deep brownish tinge; rest of upper-parts very dark blue-slate, scapulars, back and upper tail-coverts more or less tinged brown; short grey-white line under eye; all under-parts below throat paler slate with slight grey-brown tinge, and, when freshly grown, feathers usually slightly fringed white including axillaries and under wing-coverts; under tail-coverts blackish; tail-feathers brown-black; primaries grey-black, tips blacker; secondaries greyer-black with varying amount of white or brownish-white at tips, inner elongated ones glossy black without white and tinged brown especially at tips of innermost; wing-



The Coot (*Fulica a. atra*). Adult male, summer.

coverts as mantle but inner median and greater with glossy brown tinge as inner secondaries, coverts all round edge of wing with white outer webs forming very narrow white line, which is also visible on extreme edge of outer web of outer primary. This plumage is acquired by complete moult July–Oct. All wing-feathers, wing-coverts and tail-feathers are moulted simultaneously but sometimes one or two feathers do not drop until others are about a quarter grown. Some adults noted as moulting body in May may have been starting autumn moult early, while others moulting body April appeared to be 1st summer birds starting autumn moult. There appears to be only one regular moult but some individuals may renew some feathers a second time in spring.

Nestling.—Closely covered with down with long, fine hair-like

tips, except centre of fore-head which is bare in position of shield, and crown where down is very sparse and lores, sides of fore-head and round eyes where down is short and has drop-like, waxy tips of crimson. General colour of down black, tinged greyish on under-parts, tips of down on back of neck, sides of neck and chin and throat reddish-orange, on mantle and wings yellow and on rest of upper-parts and under-parts whitish. These tips are coarse and formed by thickish sheaths each enclosing a number of filaments of down which when freed from the sheath are black. Crimson tips to down on sides of fore-head and round eyes is also formed by sheath-like substance produced in drop-like shape beyond tips of down itself. As bird grows older much of the sheath on body is lost but it persists on head, neck and throat. Down is replaced by juvenile feathers to tips of which it clings. Thumb with rather strong claw, curved at tip.

Juvenile.—Upper-parts brown-black becoming more sooty-brown on back and rump, feathers of fore-head and crown usually narrowly tipped grey-white; lores, ear-coverts and sides of neck freckled brown-black and grey-white; chin, throat and upper-breast white with brown-slate bases of feathers not entirely concealed; rest of breast and belly brownish-slate, feathers more or less fringed white; flanks and vent browner; tail, wing and wing-coverts as adult.

First winter and summer.—Upper-parts like adult but with slightly more brown tinge; under-parts more tinged brown than in adult, more feathers fringed white (but varying) and often some white feathers on chin, throat and neck. The juvenile body-plumage is moulted Aug. to Nov. and Dec. but not wing- or tail-feathers nor wing-coverts.

Measurements and structure.—♂ wing 200–225 mm., tail 47–60, tarsus 57–67, bill from shield 33–38 (12 British measured). ♀ wing 196–218, bill 30–37. Primaries: 2nd and 3rd longest, 1st 15–25 mm. shorter, 4th 3–9 shorter, 5th 10–20 shorter; 1st primary sharply pointed. Outer secondaries rather shorter than 10th primary, tips rounded, innermost almost or quite as long as longest primaries, tips pointed. Tail very short, rounded, 12 to 16 feathers, tips rounded; upper and under tail-coverts nearly as long as tail. Bill stout, compressed and tapering. At base of upper mandible an elliptical, fleshy plate or “shield,” larger in males than females, much reduced in juvenile and 1st winter and somewhat reduced in adults in autumn, in breeding-season covering fore-part of crown to beyond eyes. Nostrils oblong in fore-part of shallow nasal groove. About one-fourth of tibia bare; tarsus compressed and strong; three front toes very long and slender with wide, laterally expanded membranes contracted at each joint thus forming a scalloped outline; hind toe elevated, comparatively small; claws, long, slightly curved and very sharply pointed.

Soft parts.—(ad.) Bill white with rosy tinge; shield white; legs and feet greenish, tibia orange, toes bluish-grey, joints slate; iris

red-brown to blood-red. In nestling skin above eyes blue, on crown flesh-colour ; iris brown ; legs and feet slate-black.

CHARACTERS AND ALLIED FORMS.—Represented by other forms in Australian region. *F. cristata* (S. Europe, Africa) has knob-like excrescences on posterior part of shield and no pale tips to secondaries. Fleishy plate on fore-head and scalloped toes distinguish Coot from other British birds.

FIELD-CHARACTERS.—More aquatic than Moorhen and frequents more open water, e.g. lakes, reservoirs, and slow-flowing rivers. Obtains much of its food by diving. On the water a bulky bird, with black plumage relieved only by conspicuous white shield on fore-head. Rises from water with difficulty, pattering along surface. When well on the wing with neck outstretched and feet trailing behind has same torpedo shape as Moorhen but is much larger. Besides the call, a loud barking “kow-kow,” utters a sharp “tnewt” and metallic clinking notes. Hunger-cry of young, a piping “quee-eep.”

BREEDING-HABITS.—Usually breeds on margins of lakes and large ponds, much less frequently on slow-flowing rivers, and often in company with other birds of same species. *Nest*.—Large, built of dead leaves of reed and flag and raised above water-level sometimes to a height of a foot. *Eggs*.—Usually 6 to 9, occasionally up to 13, while still larger numbers (up to 17 and 22) have been recorded, probably by 2 females ; very uniform in colour, with stone-coloured ground and fine spots and speckles of dark brown. *Breeding-season*.—From about second week March onward, but often not till much later. *Incubation*.—By both sexes, though chiefly by female. Period 21–23 days. Presumably double brooded.

FOOD.—Largely vegetable matter, especially soft green stalks of reed, and aquatic plants obtained by diving, as well as grass and seeds of water-plants (*Potamogeton*, etc.). Also eggs of other birds, small fish, insects, small bivalve mollusca, and has been recorded as killing young ducklings.

DISTRIBUTION.—*British Isles*.—Resident. Fairly generally distributed and locally very numerous. In severe weather moves to tidal waters and southwards.

DISTRIBUTION.—*Abroad*.—Greater part of Europe and Asia and N. Africa, on passage in Atlantic Isles, sparingly Azores and Iceland. Partial migrant, northern birds migrating to southern latitudes, wintering in great numbers on lakes and larger ponds, especially in Mediterranean countries to N. Africa, on Blue Nile, in Asia as far south as Java and Celebes. Casual Færoes and Greenland. Replaced by closely-allied forms in Australia, Tasmania, and possibly E. Asia.

[NOTE.—Three examples of the ANDALUCIAN HEMIPODE, *Turnix sylvatica sylvatica* (Desf.), no doubt escaped from captivity, have been recorded as having been captured in England (Yarrell, III, p. 131 ; Saunders, p. 506).]

ORDER GALLI.

A large and well characterised order of schizognathous, holorhine, four-toed land-birds distributed over all continents and widely known as the game-birds. Basipterygoid processes much specialized, not free but articulating with distal end of pterygoids. Vomer small, often greatly reduced. Sternum with large spina communis, high and long keel, and two deep notches on each posterior margin. Bill short and stout, culmen arched and overhanging lower mandible. Body-feathers with well-developed after-shafts. Quintocubital, i.e. 5th secondary quill present. Nestling covered with down, nidifugous.

Key to families of Order GALLI.

Nostrils covered with feathers, tarsus feathered	.	.	.	<i>Tetraonidæ.</i>
Nostrils bare of feathers, tarsus not feathered	.	.	.	<i>Phasianidæ.</i>

FAMILY TETRAONIDÆ.

Contains the Grouse, Capercaillie, Blackcock. Nostrils covered by feathers. Tarsus and often toes feathered, never any spurs, when toes not feathered laterally pectinated. Northern hemisphere.

Key to genera of Family TETRAONIDÆ.

1 {	Tarsi and toes covered with feathers	.	.	.	<i>Lagopus</i> , p. 859
	Tarsi feathered, toes bare	.	.	.	2
2 {	Tail forked	.	.	.	<i>Lyrurus</i> , p. 855
	Tail rounded	.	.	.	<i>Tetrao</i> , p. 850

Genus TETRAO L.

TETRAO Linnæus, Syst. Nat., ed. x, i, p. 159 (1758—Type by subsequent designation of Gray, 1840 : *T. urogallus*).

Large game-birds with feathered nostrils, and feathered tarsus but bare toes, though latter at base covered by bristly feathers ; on sides of toes two rows of narrow scales, like teeth of a comb. Tail long, strongly rounded ; rectrices 18. First primary much shorter than second, about as long as 8th, fourth longest. Sexes very different. Eggs spotted. 2 species both in Palæarctic region only.

TETRAO UROGALLUS

485. *Tetrao urogallus urogallus* L.—THE CAPERCAILLIE.

TETRAO UROGALLUS Linnæus, Syst. Nat., ed. x, i, p. 159 (1758—Europe. Restricted typical locality : Sweden).

Tetrao urogallus Linnæus, Yarrell, III, p. 45 ; Saunders, p. 491.

DESCRIPTION (Plate 13).—*Adult male.* *Winter.*—Crown, nape, neck and sides of neck bluish-grey finely barred and vermiculated black (feathers rather narrow and elongated) ; upper-mantle dark red-brown finely vermiculated grey, tips of feathers often with

narrow greenish-glossy margin ; centre of mantle and scapulars dark brown finely vermiculated red-brown and tips of longer scapulars more or less vermiculated grey ; rest of upper-parts black-brown finely vermiculated bluish-grey but outer series of upper tail-coverts mostly black with varying amount of dark grey or brownish vermiculations and conspicuous but narrow white tips ; lores and feathers on sides of upper mandible black with slight greenish tinge ; chin and upper-throat glossy green, feathers with black centres, narrow, somewhat elongated and stiff ; lower-throat as sides of neck but darker and feathers sometimes with somewhat glossy tips ; broad band across upper-breast glossy green, feathers with black-brown bases ; rest of breast brown-black, feathers more or less tipped (narrowly) glossy and those in centre with varying amount of white patches ; sides of breast brown-black vermiculated grey, flanks less vermiculated and feathers with white tips varying in breadth ; feathers of belly and tibia of loose structure, dark brown tipped white ; those on sides of tarsus also loose and grey-brown, those on front of tarsus closer structure and darker brown vermiculated reddish-brown ; under tail-coverts black tipped white (longer ones sometimes without white tips) bases of loose structure, tips compact ; axillaries white with slight brown tips ; inner half of under wing-coverts white, outer half dark brown vermiculated rufous and with a few white patches at edge of wing ; tail black, sides of feathers, especially central ones, more or less vermiculated dark grey, across distal half of tail a broad but irregular band of grey-white spots or marks varying in individuals ; primaries dark brown with outer webs more or less freckled paler brown at tips and mottled grey basally except outermost and inner three which are uniform ; secondaries dark brown with sides of outer webs vermiculated red-brown and tips greyish ; primary-coverts dark brown ; rest of wing-coverts finely vermiculated red-brown as centre of mantle and some median and greater with some greyish vermiculations at tips. This plumage is acquired by complete moult July–Sept. sometimes not finished Oct. *Summer*.—A partial moult confined to head and neck takes place May or June. New feathers on sides of throat, a narrow line on sides of chin, some on base of throat, a few on crown and usually a few mixed with metallic green of chin are short and round-tipped, brown-black vermiculated grey without bluish tinge and more coarsely vermiculated than elongated blue-grey winter feathers, those on sides of chin sometimes with fine whitish shaft-streaks, those among metallic feathers on chin mostly black with indistinct grey freckles.

Adult female. Winter and summer.—Crown, back and sides of neck and upper-mantle barred orange-buff and black with varying amount of blue gloss on penultimate black bar which is broad, extreme tips whitish-grey more or less speckled black ; mantle, scapulars, back and rump mostly black-brown with orange-buff bars narrow and usually mostly concealed, tips of feathers mottled orange-buff or rufous-buff and with varying amount (most marked

on back and rump) of whitish-grey speckled with black, a few large white spots at tips of some scapulars; upper tail-coverts rufous-buff to chestnut irregularly barred black and conspicuously tipped white; chin buff; throat and upper-breast orange-buff to chestnut-buff, varying number of feathers with broad blue-black penultimate bars and white tips, these being usually most numerous at base of throat (sometimes whole throat and breast uniform chestnut-buff); feathers of rest of under-parts orange-buff barred black (penultimate bar broad) with long white tips; feathers of centre of belly as male very loose, brown with long white tips; feathers on front of tarsus speckled dark brown, buff and grey, those at back long and loose and grey-white; under wing-coverts barred



The Capercaillie (*Tetrao u. urogallus*).
Adult female.

orange-buff and brown and tipped white; axillaries white with streaks or patches of brown and some rufous; tail chestnut (varying in shade) narrowly tipped dull white, rather narrowly and often brokenly barred black-brown, penultimate bar being broadest; primaries dark brown, outer webs mottled pale red-brown, inner three

with outer webs uniform, tips edged rufous and inner edge of inner webs speckled rufous; secondaries dark brown mottled buff to rufous chiefly along outer edge, narrowly tipped dull white, innermost more mottled and white tips longer and purer; wing-coverts as mantle and back, innermost and lowest series of median with some large white spots at tips as scapulars. This plumage is acquired by complete moult July-Oct. sometimes commencing June. There appears to be no second moult on head and neck as in male. N.B.—Females with varying amount of male-like plumage occur as do hybrids with Black Grouse.

Nestling.—Closely covered with longish soft down, shorter on head and tarsus; toes bare. Crown and neck yellowish-buff, down tipped slightly rufous on nape, whole crown marked with black lines and blotches more distinct on lores, fore-head, over eyes, in centre of crown and sides of neck, those on nape less distinct; back of neck yellowish, down with black bases, that on lower part tipped rufous with some blackish but no lines or blotches; rest of upper-parts pale yellowish-buff, down tipped rufous and black forming ill-defined pattern; wings more rufous, edged black; under-parts pale buffish-yellow, bases of down sooty; at base of throat a patch tinged orange-buff. Down is replaced by juvenile feathers.

Juvenile. Male.—Crown and neck buffish-grey very narrowly barred black-brown; mantle and scapulars buff-brown much more broadly barred and vermiculated black-brown, feathers with pale wedge-shaped tip and often narrow pale buff shaft-streak; back

and rump greyer vermiculated dark brown and centres of tips of feathers whitish ; throat greyish-white barred blackish ; breast rufous more or less mottled dark brown ; flanks buff tinged rufous ; rest of under-parts buffish-white ; tail buff to rufous-brown barred and freckled dark brown, tipped pale buff, shafts pale ; primaries blackish, outer webs and tips of outer feathers mostly rufous-buff and those of rest mottled same ; secondaries same but outer webs with comb-like pale buff edgings and much mottled and speckled rufous-brown ; tips rufous and extreme tip pale buff with narrow dark brown penultimate bar, innermost feathers and wing-coverts rufous-brown mottled and speckled dark brown with whitish-buff wedge-shaped tips and shaft-lines. *Female*.—Upper-parts like male but head and neck buff not so grey and blackish, barring on upper-parts, especially head, neck, back and rump broader, back and rump also more buff ; wing-coverts less finely speckled and with coarser markings of buff and black-brown ; chin and throat pale buff with minute black-brown spots ; lower-throat orange-buff narrowly barred black-brown ; breast orange-buff ; rest of under-parts pale buff broadly barred black-brown.*

First winter. Male.—Like adult but at once distinguished by narrower tail-feathers and smaller size. Feathers of neck rather shorter and not so bluish as in adult ; sides of head usually more vermiculated ; chin often with little gloss ; black portion of breast usually tinged brown and more or less vermiculated ; outer series of upper tail-coverts considerably more vermiculated than in adult and tips usually not so white ; tail-feathers usually more vermiculated, central pair usually with narrow white tips, mottled white band ill-defined and white spots absent from outer web of outer feathers ; inner three primaries with rufous margins at tips ; sometimes one or two pale red-brown innermost greater coverts. The juvenile plumage is completely moulted except for outer two primaries June to Sept. *Female*.—As adult female but tail-feathers narrower and not so rich a chestnut, buff portions of feathers of head and neck paler and more yellowish, black at tips not glossed blue, tips of inner webs of two outer primaries speckled red-brown.

Measurements and structure.—♂ wing 375–410 mm. (1st winter 340–385), tail 280–325, tarsus 64–75, bill from nasal groove 32–38 (14 measured). ♀ wing 290–305, tail 155–180, tarsus 48–55, bill 19–24. Primaries : 4th longest, 3rd and 5th as long or 5–10 mm.

* In the juvenile the head, neck and throat are the last to become feathered and before the nestling down is completely lost on throat moult to first winter has commenced on upper-mantle and base of back of neck, while at the same time 9th and 10th juvenile primaries and corresponding coverts are dropped and new first winter ones partially grown. On the other hand, the juvenile secondaries and wing-coverts are not at this time fully grown while the outer two primaries (i.e. 1st and 2nd) are still more backward and are probably not really part of the juvenile plumage since they are not small, weak feathers like the other juvenile primaries, but as strong as those in the adult and are retained during first winter and summer.—H.F.W.

shorter, 1st 80–95 shorter, 2nd 20–35 shorter ; outer webs of 2nd to 7th emarginated basally and of 1st to 7th very narrow. Secondaries as long as 7th to 9th primaries, tips rounded. Tail rounded, 18 feathers, very broad in adult male, narrower in female and 1st winter, tips fairly square, rounded laterally. Upper and under tail-coverts rather short. Tarsus feathered to base of toes but back of tarsus bare. Hind toe small and elevated, three front ones connected at base by web, and margined with comb-like serrations ; claws strong, slightly curved and dilated, rather blunt. Bill short, strong, curved and smooth, tip of upper mandible projecting and somewhat rounded and thin. Nostril hidden by feathers in a somewhat deep nasal groove. Over and behind eye a bare space covered with small papillæ most marked in adult male.

Soft parts.—Bill pale horn-colour ; toes grey-brown ; iris brown ; bare skin over and behind eye bright red.

CHARACTERS AND ALLIED FORMS.—*T. u. aquitanicus* (Pyrenees, N.W. Spain) is smaller and female is darker than usual in typical ; *T. u. taczanowskii* (Siberia) is paler on upper-parts and wing-coverts in both sexes ; *T. u. uralensis* (S. Ural) is still whiter on under-parts, male has grey of head and rump paler and female longer grey and white tips to feathers of upper-parts. Large size and rounded tail distinguish it from other British game-birds, and in juvenile unbarred under-parts from Black and Red Grouse.

FIELD-CHARACTERS.—Inhabits coniferous woods and more rarely those of oak and birch. Large size and dark colours identify male at once. Female rather larger than Greyhen, is further distinguished by rufous patch at base of fore-neck and a rounded tail barred broadly with black. During courtship display male, absorbed in his performance, seems indifferent to human presence, as perched on a rock or the top of a pine tree, with spread tail and drooping wings, he utters a variety of loud discordant cries.

BREEDING-HABITS.—A forest-haunting species, preferring coniferous woods. *Nest.*—A hollow scraped in ground, usually at foot of tree in forest. *Eggs.*—Usually 6 to 9, occasionally 10 to 14, pale yellowish with rather scanty spots and blotches of yellowish-to reddish-brown. Average size of 100 eggs, 57.63×41.37 . Max. : 62.2×42.6 and 58.3×43.5 . Min. : 51.3×39.6 and 54.2×39 mm. *Breeding-season.*—From early May onward. *Incubation.*—By female alone. Period : 26–28 days. Single-brooded.

FOOD.—From October to April almost entirely shoots of conifers, especially Scots pine, but also at times buds of larch, and very rarely spruce. In spring, summer and autumn diet is varied by insects (including larvæ of coleoptera and hymenoptera (ants)) fruit and berries (wild raspberry, juniper, mountain ash, rose, hawthorn, blackberry, cranberry and bilberry), cereals (oats and maize put down for Pheasants), as well as bracken shoots, grass, seeds, birch buds and in July and August heather tops and bloom.

DISTRIBUTION.—*Scotland.*—Resident. Became extinct Scotland and Ireland about 1760, and England perhaps a century previously. Reintroduced from Sweden into Perthshire 1837, and subsequently in many places. Now spread over Tay area and north into Aberdeen, Elgin, Inverness and Ross-shire, west into Argyll, south into Stirling, Dumbarton and Lanark, and sporadically Mid and East Lothians, Ayr, Renfrew, Wigtown, Dumfries and other southern counties.

DISTRIBUTION.—*Abroad.*—Forests of Europe generally from N. Russia and Scandinavia to Alps, Carpathians and Balkans. Represented by more or less closely allied subspecies in Pyrenees and Cantabrian Mts., east Russia, Ural Mts., and Siberia to Transbaikalia.

Genus LYRURUS Swains.

LYRURUS Swainson, Richardson and Swainson's Fauna Bor.-Amer., II, p. 497 (Febr., 1832—Type named as *L. tetrix*).

Not so large as *Tetrao*, tarsus feathered, toes bare, laterally pectinated, nostrils covered, 1st primary much shorter than 2nd, between 7th and 8th in *L. tetrix*, 3rd to 5th longest. Tail in male deeply forked, in female slightly, in male lateral rectrices at tips curved outwards. Sexes very different. Eggs spotted. Two species, both Palearctic only.

LYRURUS TETRIX

486. *Lyrurus tetrix britannicus* With. and Lönnb.—THE BRITISH BLACK GROUSE.

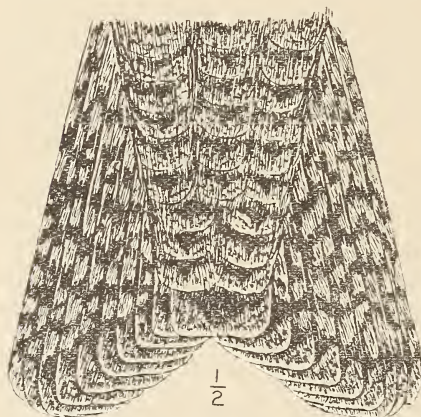
LYRURUS TETRIX BRITANNICUS Witherby and Lönnberg, Brit. B. (Mag.), VI, p. 270 (1913—Great Britain).

Tetrao tetrix Linnæus, Yarrell, III, p. 60; Saunders, p. 493.

DESCRIPTION (Plate 13).—*Adult male. Winter.*—Upper- and under-parts black; crown, neck, upper-mantle, back, throat and upper-breast glossed dark blue; fore-head, ear-coverts and chin with less and more greenish gloss; feathers on vent and sides of tarsus of loose structure and tipped white; those on tibia with long white tips; on front of tarsus spotted grey-white; under tail-coverts white, sometimes with black spots (varying in size and number) in centres of tips and sometimes near base of feathers; axillaries and under wing-coverts white, sometimes with small black tips, coverts along edge of wing black or mostly black, but those at insertion of wing white and a small white patch at this point showing from above; tail black; primaries dark brown, greyer on outer webs, bases of inner feathers white; secondaries with distal third black-brown (tips narrowly fringed white) and basal two-thirds white, forming white bar across wing, but on innermost feathers concealed by coverts; primary-coverts, bastard-wing and greater coverts black with extreme bases white; rest of wing-coverts

black ; outer webs of black portions of secondaries, inner wing-coverts and scapulars usually with varying amount of inconspicuous, minute, dark red-brown freckling. This plumage is acquired by complete moult July (sometimes June) to Oct., and often not quite finished even in Dec. Usually all tail-feathers are moulted almost simultaneously. *Summer*.—A partial moult of head, neck, chin and throat takes place June and July as in Capercaillie but slightly later so that often moult to winter is in progress at same time on other parts of body and inner primaries. New summer feathers shorter and more rounded than winter, on chin, throat and sides of head black, barred, marked or edged white, on back of head and neck and sometimes crown and upper-mantle black finely barred or vermiculated dark rufous. These feathers are retained for only about a month.

Adult female. Winter and summer.—Crown, back and sides of neck rufous thickly barred blue-black, rest of upper-parts same but tips of feathers vermiculated black and penultimate black bar very



Tail and upper tail-coverts of adult female of the British Black Grouse (*Lyrurus t. britannicus*).

broad especially on mantle and scapulars and those on back often with considerable amount of glossy-blue and tips sometimes buffish-grey, longest scapulars and long upper tail-coverts sometimes tipped grey ; chin and sides of head rufous - buff narrowly barred black ; throat and upper - breast deeper rufous and more widely barred ; rest of under-parts same but feathers tipped dull grey and centre of belly sometimes with more black than rufous-buff ; under tail-coverts rufous - buff barred black with long white tips ;

axillaries and inner half of under wing-coverts white usually with some brown marks, outer half with concentric dark brown bands tinged rufous ; tail-feathers black coarsely and heavily vermiculated rufous, tipped grey ; primaries dark brown narrowly tipped buff, outer webs mottled buff, extreme bases of inner webs of innermost feathers white ; secondaries with basal halves and extreme tips white and distal halves black heavily vermiculated buff to rufous-buff on outer webs ; primary-coverts and bastard-wing black-brown, outer webs vermiculated rufous-buff ; wing-coverts as upper-parts, tips of greater and inner median more or less grey or even sometimes dull whitish. This plumage is acquired by complete moult July to Nov. and there is no second moult as in male. N.B.—Females with varying amount of male-like

plumage occur as do hybrids with Capercaillie, Pheasant and Red Grouse.

Nestling.—Much like that of Capercaillie but top and back of crown with a "cap" of chestnut surrounded with black line and sometimes slightly mottled black; black marks on sides of head, lores and fore-part of crown much as in Capercaillie; down centre of back of neck a black line; rest of upper-parts slightly darker than Capercaillie; base of throat only slightly tinged orange; toes bare.

Juvenile. Male.—Whole upper-parts barred black and buff, black barring varying in width but broader on mantle and back and buff darker and more rufous and somewhat vermiculated black; sides of head and sides of neck paler, often whitish and more spotted brown-black; chin and throat same but with fewer black spots and base of throat with squamated appearance and more rufous; rest of under-parts buff (on breast rufous-buff) fairly closely barred black-brown, dark on breast, paler on belly; under tail-coverts uniform pale buff; tail-feathers narrow and short, rufous-buff barred and freckled black-brown and narrowly tipped buff; primaries much like adult female but more mottled buff at tips; secondaries brown barred and mottled buff chiefly on outer webs and with small wedge-shaped buff tips, innermost more rufous and vermiculated and with broad black bars at tip; wing-coverts and scapulars rufous-buff broadly barred black and with buff to whitish shaft-streaks broadening at tips. *Female*.—As male but not so rufous on upper-parts and wing-coverts, breast less rufous and more widely barred.

First winter. Male.—Like adult but glossy blue not so uniform, varying but always more and coarser rufous vermiculations on scapulars, inner wing-coverts and outer webs of secondaries; mantle sometimes and upper tail-coverts often more or less vermiculated; crown and especially neck usually with dark rufous bars; central tail-feathers narrowly tipped whitish; some feathers on chin and throat sometimes narrowly tipped white; occasionally some white shaft-streaks or narrow tips or rufous bars on breast; outer webs of primaries mottled, tips of two outer primaries minutely freckled buff to rufous-buff. N.B.—Amount of vermiculation and barring varies greatly individually as does amount of curling of outer tail-feathers. The juvenile plumage is completely moulted commencing when bird is about half grown and while juvenile feathers are still growing on head and neck, but two outer primaries which are among last juvenile feathers to grow and are much like adult in structure and size are not shed. Moult often continued to Nov. and sometimes Dec. *First summer*.—Moult on head, neck and throat exactly as in adult. *Female*.—Like adult and no certain distinction though outer two primaries usually more sharply pointed and more vermiculated at tips.

Measurements and structure.—♂ wing 252 (one 246)–265 mm. (1st winter 245–265), tail: central 75–100, outer 65–100 longer, curled (1st winter 45–75 longer), tarsus 49–55, bill from nasal

groove 15–17.5 (12 measured). ♀ wing 214–234, tail : central 70–93, outer 10–30 longer, bill 14–15. Primaries : 4th longest, 3rd and 5th 2–7 mm. shorter but sometimes as long, 1st 48–62 shorter, 2nd 12–22 shorter ; outer webs of 2nd to 7th emarginated basally and of 1st to 7th very narrow. Tail in adult male much forked, 18 broad feathers, 4 outer on each side elongated and tips curled outwards, central 10 straight and tips square, in first winter male feathers narrower and outer less (or scarcely) curled, in female tail only slightly forked, outermost feather slightly shorter than next, all straight. Rest of structure as in Capercaillie, but under tail-coverts comparatively much longer, being in both sexes rather longer than central tail-feathers.

Soft parts.—Bill and claws brown-black ; toes and iris brown ; bare skin over and behind eye bright red.

CHARACTERS AND ALLIED FORMS.—*L. t. tetrix* (N. Europe) is like *L. t. britannicus* but female has whiter or paler grey, and also broader, tips to feathers of wing-coverts and under-parts, grey tips to feathers of rump and is blacker on belly ; *L. t. viridanus* (W. Siberia) adult male has bases of primary-coverts white and black subterminal band on secondaries much narrower showing more white, feathering of tarsi whiter, female with longer and whiter tips to body-feathers and centre of throat usually buffish-white ; *L. t. mongolicus* (Transbaikal) adult male is much like last but larger, female like *L. t. tetrix* but more yellowish not so rufous-buff ; *L. t. ussuriensis* (Manchuria) adult male has glossy feathers more greenish and less purplish-blue and primary-coverts and secondaries like *L. t. viridanus*, female is much paler than *L. t. tetrix* but not quite so pale as *L. t. viridanus*. Distinguished from other British game-birds by its forked tail.

FIELD-CHARACTERS.—Haunts scrub and sparsely wooded places fringing moorlands rather than moors themselves. Often feeds in rushy pastures and, in autumn, in cornfields. Male (Blackcock) is conspicuous and unmistakable, black with white wing-bars, axillaries and under tail-coverts, and lyre-shaped tail. Female (Greyhen) chestnut-brown freckled and barred with black, is smaller than and not so boldly barred with black above as Capercaillie, larger and less ruddy than Red Grouse, and, unlike either, has forked tail. Flight swift but rather laboured. Polygamous like Capercaillie. At dawn and dusk in spring cocks engage in elaborate displays, sparring, dancing and posturing before assembled hens, uttering the while a continuous whining cry, to which hens reply with a plaintive cooing.

BREEDING-HABITS.—Found not only in coniferous woods but also on heaths and waste lands with birches and on rough pastures with occasional plantations. *Nest.*—A hollow in ground, sheltered by grass or heather, sometimes in wood and usually with some trees in neighbourhood. *Eggs.*—6 to 10, rarely 12, much like those of Capercaillie but smaller, yellowish-white with scanty markings of

yellowish- to reddish-brown. Average size of 100 British eggs, 51.59×37.19 . Max. : 54×38.2 and 53.5×40.9 . Min. : 49×38.2 and 52.2×34.3 mm. *Breeding-season*.—Usually from mid May onward. *Incubation*.—By female alone. Period : 24–26 days. Single-brooded.

Food.—Very varied : in winter and spring chiefly birch buds, but also shoots of larch and Scots pine and alder catkins : during rest of year insects, including coleoptera (especially heather beetle, *Lochmœa suturalis*) : also galls (*Neuroterus*), grass, shoots of heather, blaeberry and bog myrtle, potato, turnip, sorrel, trefoil, etc., fruit of wild strawberry, raspberry, cranberry, blaeberry, bearberry, rowan, hawthorn and seeds of grasses, rushes and sedge as well as grain of all kinds.

DISTRIBUTION.—Confined to *Great Britain*.—Resident. Almost extinct Cornwall, scarce south Devon, more plentiful north Devon and Somerset, some Dorset (extinct in Wilts., Hants., Kent, Surrey and Sussex), locally many parts Wales, English border counties and north midlands, and more numerous (but still local) in all English counties north of Derby (including north-west Lines.). Generally distributed mainland Scotland and some I. Hebrides, but not O. Hebrides, Orkneys or Shetlands. Has been introduced many parts (e.g. Sussex, Surrey, Berks., Bucks., Norfolk, Suffolk, Orkneys, N. Wales, Ireland), but generally unsuccessfully.

DISTRIBUTION.—*Abroad*.—Replaced by other subspecies in continental Europe from Scandinavia and Russia to Switzerland and Apennines, east Russia and northern Asia.

Genus LAGOPUS Briss.

LAGOPUS Brisson, Orn., I, pp. 26, 181 (1760—Type by tautonymy Brisson's *Lagopus* which is *Lagopus lagopus*).

Smaller than *Lyrurus*. Tarsus and toes feathered, latter more thickly in winter than in summer. Tail slightly rounded, short, 16 rectrices. Nostrils covered. 1st primary much shorter than 2nd, 3rd and 4th longest. Sexes about same size, but generally different in colour. Eggs spotted. Four species, mostly in several subspecies, in arctic regions and northern mountain ranges of northern hemisphere.

LAGOPUS SCOTICUS

487. *Lagopus scoticus scoticus* (Lath.)—THE BRITISH RED GROUSE.

TETRAO SCOTICUS Latham, Gen. Syn., Suppl., I, p. 290 (1787—Scotland). *Lagopus persicus* Gray, Gen. B., III, p. 517, pl. 133 (1845—No description. The type in Brit. Mus. is a pale variety of the Grouse, labelled "Persia," which is apparently an error for "Perthshire").

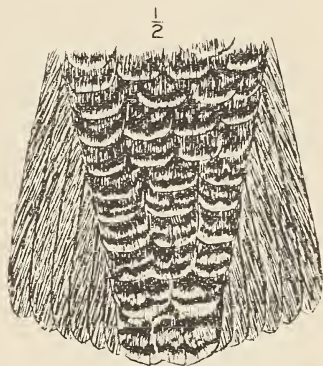
Lagopus scoticus (Latham), Yarrell, III, p. 73 ; Saunders, p. 495.

DESCRIPTION.—*Adult male*. *Winter*.—Feathers round base of upper mandible black more or less tipped white ; crown and back

of neck chestnut with varying amount of rather broad black barring; rest of upper-parts varying chestnut to rufous-brown; finely barred and vermiculated black but with broad black marks near tips of feathers of mantle and scapulars, long upper tail-coverts often, and scapulars occasionally, with some grey or whitish tips; (almost invariably some buff-barred summer-feathers on upper-parts and sometimes considerable amount of buff barring); apex of chin, and especially moustachial region, and fore-part of lores black, feathers more or less tipped white or mostly white; throat to upper-breast, sides of head and neck chestnut, sometimes almost uniform but usually more or less barred or spotted black and often feathers tipped white on ear-coverts and sides of head; breast, sides and flanks dark chestnut to rufous-brown, finely barred and often vermiculated black and feathers slightly tipped grey-white; centre of under-parts black with varying amount of chestnut or rufous barring and feathers tipped white varying greatly in amount; under tail-coverts rufous vermiculated black, tipped grey-white with narrow black subterminal bar; feathers on tibia and front of tarsus brown tipped white, those of sides of tarsus and toes more hair-like and white; axillaries and inner half of under wing-coverts white with often some brown-black markings, outer half brown-black and white varying and with sometimes rufous marks; (amount of black, shade of rufous and amount of white on under-parts vary greatly and often there are some buff and black barred summer feathers); tail-feathers black, varying number (but not outer 3 or 4 pairs) tipped dark grey with fine rufous vermiculated subterminal line, central pair vermiculated and sometimes irregularly barred rufous along edges almost to centres; primaries black-brown, outer ones with varying amount of grey edging towards bases, inner ones tipped grey-white (varying); secondaries and greater coverts black-brown with varying amount of rufous vermiculation on outer webs; innermost secondaries, and median wing-coverts like rest of upper-parts; lesser coverts blacker with fewer rufous vermiculations; primary-coverts and coverts along edge of wing black-brown, sometimes with varying amount of grey-white tips. This plumage is acquired by complete moult beginning with inner primaries in June (while summer body-feathers are still growing); body-plumage usually begins Aug. (sometimes July) and ends Nov. or Dec. or even later; tail usually beginning July is moulted very rapidly, 6 or 8 central feathers usually growing almost simultaneously. *Summer*.—A gradual moult (often temporarily arrested) of feathers of upper-parts, head and neck all round, upper-breast, some flank-feathers and some innermost greater and median coverts and secondaries takes place May and June but sometimes commences March–April (very rarely Feb.); rest of under-parts, wings and tail are not moulted. Whole upper-parts including upper tail-coverts, scapulars and often one or two innermost secondaries, greater and median coverts, black narrowly barred rufous to yellowish-buff and at tips of feathers often whitish

buff, barring at bases of feathers usually yellowish and distal central parts of feathers with large black patch; sides of neck, lower-throat, upper-breast and some feathers of flanks barred black and yellow-buff to rufous; rest of under-parts as winter but white tips to feathers reduced by wear; feathers on tarsus and toes also moult and are shorter and scantier in summer-plumage.

Adult female. Winter.—Whole upper-parts much like adult male *summer* and often indistinguishable but tips of feathers usually with larger yellow-buff spots or wedge-shaped marks giving a more spotted appearance; under-parts often as adult male *winter* but chin, throat and upper-breast usually more yellowish and more widely and prominently barred with black; rest of under-parts usually paler chestnut than in male and more prominently barred black, black central area usually much restricted; tail-feathers as male but considerably more marked rufous-buff central pair being usually much barred and rest more or less barred or vermiculated on basal half of outer webs but outer 3 or 4 pairs often without rufous-buff; primaries and secondaries as adult male; wing-coverts with usually paler and buffer bars and vermiculations and inner feathers as well as innermost secondaries usually with yellow-buff wedge-shaped tips. This plumage is acquired by complete moult as in male. *Summer.*—Moult as in



Tail and upper tail-coverts of adult female of the British Red Grouse (*Lagopus s. scoticus*).

male but earlier, viz. March (sometimes commencing Feb.) to May. Whole upper-parts and new inner coverts and secondaries black broadly and prominently barred yellow-buff, terminal bar or fringe of each feather being usually paler and often whitish especially on scapulars and upper tail-coverts (much yellower and more broadly barred than male *summer* or female *winter*); sides of neck, lower-throat, upper-breast and varying number of feathers on sides and flanks broadly barred yellow-buff and black, chin and upper-throat yellow-buff slightly barred or streaked black and with varying amount of chestnut; rest of under-parts as winter but feathers which subsequently grow on each side of bare brooding patch on abdomen are sometimes barred black and yellow-buff.

Nestling.—Much like that of Black Grouse but toes covered with down and rufous of crown darker and often much obscured with blackish and sometimes extending to fore-head; upper-parts usually darker yellowish-buff (less rufous) and black lines wider and more prominent; under-parts duller and darker, often more buffish, base of throat usually deeper, more golden-buff. Down is replaced by juvenile feathers.

Juvenile. Male and female.—Upper-parts much like adult male summer but feathers of mantle and scapulars with concentric surrounding buff lines and not so transversely barred; chin and throat yellow-buff speckled brown-black; rest of under-parts yellow-buff broadly barred brown-black; tail as upper-parts; primaries and primary-coverts dark brown marked yellow-buff on outer webs; secondaries and greater-coverts with yellow-buff bars and edgings on outer webs and tips, inner feathers and rest of coverts like upper-parts. N.B.—Juvenile plumage attained and moulted as described under Capercaillie, see p. 853, footnote.

First winter. Male and female.—When juvenile plumage is completely moulted (Oct.) they are like adults though sometimes outer (1st) primary is more sharply pointed but this is not always so.

Measurements and structure.—♂ wing 200–214 mm., tail 100–114 tarsus 38–43, bill from nasal groove 11–13 (15 measured). ♀ wing 190–208, tail 95–105, bill 9–12. Primaries: 3rd and 4th longest, 1st 35–47 mm. shorter, 2nd 5–15 shorter, 5th 5–10 shorter; outer webs of 2nd to 6th emarginated basally and of 1st to 6th very narrow and slightly serrated along edge. Tail slightly rounded, 16 feathers, tips rounded. Longest upper tail-coverts almost, or quite as long as middle tail-feathers, under tail-coverts rather shorter. Tarsus feathered and upper side of toes to claws. Hind toe very small and elevated but with strong claw, three front ones connected at base by web, rather short; claws arched, slightly curved and dilated, rather thin and obtuse (claws are moulted in autumn). Bill short, strong, curved and smooth, tip of upper mandible projecting and somewhat thin and rounded. Nostrils hidden by feathers in a somewhat deep nasal groove. Over eye a bare space with small papillæ, most marked and large in adult male.

Soft parts.—Bill brown-black; claws dark brown horn-colour; iris hazel; bare skin over and behind eye red.

CHARACTERS AND ALLIED FORM.—For distinctions of *L. s. hibernicus* see under that form. Dark brown wing-feathers distinguish Red Grouse from other species of *Lagopus*.

FIELD-CHARACTERS.—Peaty upland moors and low-lying peat-bogs and “mosses,” especially where ling and other heaths dominate the vegetation, are typical haunts. Robust form, feathered legs—more or less white—ruddy coloration which appears almost black at a distance in the darker birds, and in spring conspicuous vermilion naked patch above eye—larger than in other Grouse—are good characters. Grouse rise with a whirr and travel with strong heavy flight close to ground, rapid wing-beats alternating with long glides on bowed wings. In spring male utters a loud challenge “ko, ko, ko, ko-bac, ko-bac, ko-bac.” Other notes are a crowing “bec, bec, bec” and a nasal “yow, yow.”

BREEDING-HABITS.—Found on moors and rough pastures from sea-level up to considerable elevation. *Nest.*—A hollow in ground sheltered by heather or tussock of *Scirpus*, lined dead grasses, etc.

Eggs.—Usually 6 to 11, but 12 to 15 occasionally recorded, yellowish-white in ground colour, freely blotched all over with rich dark chocolate or red-brown. Average of 100 British eggs, 45.76×32.11 . Max. : 50.1×31.4 and 47.6×34.4 . Min. : 41.5×30.7 and 44.9×29.8 mm. *Breeding-season*.—Usually latter half April and early May, but exceptionally full clutches have been found by mid-March and once young at beginning of March. *Incubation*.—By female alone. Period variously estimated at from 20–21 to 23–24 days. Single brooded.

Food.—Staple food is shoots of *Calluna vulgaris*, *Erica tetralix* and *E. cinerea*, but where these are scarce or absent *Empetrum nigrum*, *Vaccinium myrtillus*, *Eriophorum vaginatum*, *Galium*, *Carex*, etc. In autumn cereals of all kinds freely eaten : also fruit or berries of blackberry, blueberry, cranberry, crowberry, cloudberry, hawthorn and rowan : and during summer leaves of *Salix*, *Rumex*, flowers of *Ranunculus* : while in hard weather turnip-tops and almost any vegetable-food available. Insect food also taken : diptera (Bibionidæ, Empidæ, Syrphidæ and *Molophilus*) ; coleoptera (Staphylinidæ, Elateridæ and Curculionidæ) ; lepidoptera (Noctuæ esp. *Agrotis*) ; also Tineidæ.

DISTRIBUTION.—*British Isles*.—Resident. *England and Wales*.—In, and west and north of, Glamorgan, Monmouth, Hereford, Salop, Staffs., Derby, Yorks. Stragglers have occurred many counties and introductions have been made in Surrey, Suffolk, Devon and Somerset. *Scotland*.—Generally distributed, including Inner Hebrides and Orkneys, but not Shetlands, where attempts have been made at introduction and not Outer Hebrides where *L. s. hibernicus* is found.

DISTRIBUTION.—*Abroad*.—Originally exclusively British, but recently introduced (successfully) into the mountains of the Hohe Venn in west Germany and Belgium, and less successfully in other places.

488. *Lagopus scoticus hibernicus* (Kleinschm.)—THE IRISH RED GROUSE.

TETRAO HIBERNICUS Kleinschmidt, Falco, xv, p. 3 (1919—Ireland).

Tetrao dresseri Kleinschmidt, Falco, xv, p. 3 (1919—Harris and Lewis, Outer Hebrides).

DESCRIPTION.—*Adult male*. *Winter*.—Upper-parts and wings often paler (more or less yellowish), with terminal bars often paler and black bars more pronounced than in *L. s. scoticus* but frequently no marked difference ; under-parts paler than in *L. s. scoticus* (usually more or less yellowish-chestnut) and finely and closely barred and very little vermiculated with black, usually no black on abdomen, feathers of which are finely barred as rest, no white tips or very narrow ones to feathers of belly and under tail-coverts ; often all tail-feathers vermiculated (occasionally barred) with rufous on outer webs ; the vermiculations on outer webs of

secondaries rather paler and more prominent. *Summer*.—New feathers of summer-plumage like those of *L. s. scoticus*.

Adult female. Winter.—Upper-parts usually rather paler and more yellowish than in *L. s. scoticus* but often not distinguishable ; under-parts paler and more yellowish and often considerably paler and more uniformly and finely barred. *Summer*.—New summer feathers as in *L. s. scoticus*.

Measurements.—♂ wing 187–206 mm., tail 95–110, bill 11–12 (12 Irish measured) (4 ♂ Outer Hebrides, wing 193–207, tail 97–104, bill 11–11.5). ♀ wing 185–200, tail 90–100, bill 10–12 (11 Irish measured).

DISTRIBUTION.—*Ireland*.—Resident in every county, especially mountains of west and bogs of central plain, but seldom numerous.* *Outer Hebrides*.—Resident but scarce (specimens examined from Lewis, N. Uist and Benbecula).

LAGOPUS MUTUS

489. *Lagopus mutus millaisi* Hart.—THE SCOTTISH PTARMIGAN.

LAGOPUS MUTUS MILLAISI Hartert, Brit. B. (Mag.) xvii, p. 106 (1923—Scotland. New name to replace *L. cinereus* Macg. which may be considered as a substitute name for former names of Ptarmigan in general). *Lagopus cinereus* Macgillivray, Hist. Brit. B., i, p. 187 (1837—Name to replace Linnaeus's "*Tetrao lagopus*" which had erroneously been supposed to refer to the Alpine Ptarmigan, though locality Scotland and descriptions from Scottish specimens only).
Lagopus mutus (Montin), Yarrell, iii, p. 83 ; Saunders, p. 497.

DESCRIPTION (Plate 13).—*Adult male. Autumn*.—Lores black speckled white ; head, neck and throat narrowly barred black and white with varying amount of yellowish-buff chiefly on crown and base of throat ; rest of upper-parts, upper tail-coverts, inner median and greater coverts and usually one innermost secondary pale grey slightly tinged brownish and finely and closely vermiculated black with varying amount of broad black wavy barring especially on mantle and scapulars ; chin more or less barred as throat and with varying amount of white ; breast, flanks and varying number of under tail-coverts buffish-grey to buff finely barred and vermiculated black, feathers of flanks and tail-coverts mostly with small white tips ; rest of under-parts including axillaries and under wing-coverts, tarsus and toes white ; tail black, central pair varying with extreme base and tips white, or whole distal half white or entirely white, black portion often more or less vermiculated grey, next three or four pairs with short white tips (exceptionally one or both feathers of central pair is moulted at beginning of autumn moult and is grey as upper tail-coverts and is then moulted again at conclusion of tail moult about a month or so afterwards) ; wing-coverts (except inner) and wing-feathers white

* A certain number of birds or eggs from Great Britain have been introduced from time to time in various parts of Ireland.—H.F.W.

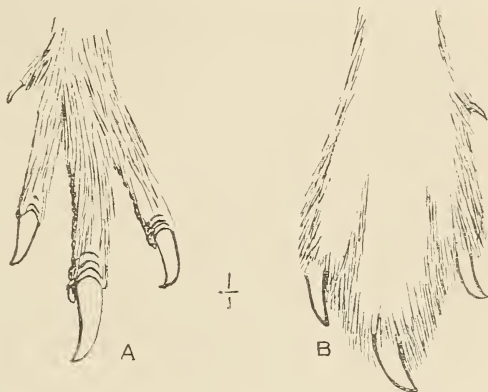


TWO-FIFTHS NATURAL SIZE (FEATHERS NATURAL SIZE).

1, Adult female, summer, 2, Adult male, summer, 3, Adult male, autumn, of the Scottish Ptarmigan (*Lagopus m. millaisi*). 4, Adult male, summer, of the British Black Grouse (*Lyrurus l. britannicus*). 5, Feathers from chin of adult male, winter, 6, Feathers from same position, adult male, summer, of the Capercaillie (*Tetrao u. urogallus*). 7, Adult female, summer, 8, Juvenile of the Common Partridge (*Perdix p. perdix*). 9, Juvenile of the Red-legged Partridge (*Alectoris r. ruja*). 10, Juvenile of the Water-Rail (*Rallus a. aquaticus*).

but primaries with black shafts. This plumage is acquired by complete moult July–Sept. *Winter*.—A partial moult which merges into the previous moult* takes place Sept.–Dec. involving all body-feathers except lower-breast, belly and legs and toes which are apparently moulted only once but moult in these regions is not completed with rest of moult to autumn and continues after winter moult has commenced, inner median and greater coverts and innermost secondary are moulted, but not rest of wings nor tail though outer primaries are not

quite complete and central tail-feathers usually still have sheaths when moult to winter commences. Whole body-plumage (including upper and under tail-coverts) white except for a broad black band through lores, narrow line over and under eye and broad patch behind eye, feathers of which are slightly tipped white; feathering of tarsus and toes white and long;



Feet of adult male of the Scottish Ptarmigan (*Lagopus m. millaisi*). A. summer, B. winter.

tail and wings as autumn but all wing-coverts white. N.B.—Usually a few autumn body-feathers here and there are retained. *Summer*.—A moult involving all upper-parts, upper tail-coverts, throat and breast and varying number of feathers of chin, flanks, under tail-coverts, inner median and greater coverts and innermost secondary takes place March to June but rest of plumage is not moulted and here and there on upper-parts and breast a few white winter feathers may be retained. Crown black more or less barred rufous-buff, feathers narrowly tipped white; back of neck broadly barred black and white or buff; rest of upper-parts including upper tail-coverts buffish-grey with varying amount of yellowish-buff, closely barred and vermiculated black-brown, many feathers narrowly fringed white and some of those of mantle with uniform black-brown basal portions not entirely concealed; lores black; chin white with a few black spots or bars; ear-coverts, sides of neck and upper-throat barred like back of neck; lower-throat and upper-breast black-brown, feathers tipped white and with varying amount of yellow-buff and sometimes white bars; sides of breast and flanks same but closely barred and vermiculated yellowish-buff; rest of under-parts as winter but usually some under tail-coverts

* In September one finds not infrequently both autumn and winter feathers side by side in various stages of growth.—H.F.W.

black-brown, tipped white and more or less vermiculated buff; tail as winter; wings as winter but inner median and a few innermost greater coverts and often one innermost secondary as upper-parts; feathering of tarsus and toes thin and worn. N.B.—The last feathers to grow in this moult, which is very gradual, are more barred with yellow-buff than the earlier ones.

Adult female. Autumn.—Upper-parts much like adult male autumn but crown and neck always with considerable amount of yellow barring and rest of upper-parts with usually more yellow-buff tinge and many feathers with small white spots or wedge-shaped marks in centre of tips (varying individually); under-parts also like male autumn but feathers of breast and flanks with white fringes or wedge-shaped marks at tips varying in size: tail as male but central pair usually considerably vermiculated grey or buff with white tip and edges of other feathers sometimes vermiculated, outer feathers often with white tips and white edging on basal half; wing-feathers as male but primaries sometimes more or less speckled black and inner secondaries and greater coverts sometimes with one or two grey-brown patches. N.B.—A few summer feathers are frequently retained. This plumage is acquired by complete moult as in male, but central pair of tail-feathers not moulting twice at this period as is exceptionally the case in male, though exceptionally central pair belonging to summer plumage is not fully grown at commencement of moult to autumn. *Winter.*—Moult like male. Like male except for differences in tail and wings described above and without black band through lores, feathers of fore-part of lores and patch behind eye with black bases more or less concealed by long white tips. *Summer.*—Moult as male but rather more complete, very rarely any white feathers retained on upper-parts, some inner greater and median coverts moulted and usually two innermost secondaries, varying number (occasionally most) of feathers of belly, most flanks and all under tail-coverts and sometimes, but by no means always, central pair of tail-feathers. Head and neck barred black and golden-buff with some small white spots at tips of feathers; mantle same but with large patches of black in middle-portions of feathers; rest of upper-parts, upper tail-coverts, central tail-feathers (when renewed), inner greater and median coverts and innermost secondaries more closely barred yellow-buff with white fringes (often somewhat wedge-shaped) to tips of most feathers, and tips of some scapulars and often inner secondaries and coverts greyer and somewhat vermiculated; chin yellow-buff streaked or narrowly barred brown-black and sometimes more or less white; rest of under-parts golden-buff barred brown-black but number of such feathers on belly varying; often many on vent and tibia tinged yellow-buff.

Nestling.—Ground-colour of upper-parts paler buff not so dark or yellowish as is usual in Red Grouse nor so yellowish as in Black Grouse, especially noticeable on neck and sides of crown; chestnut of crown intermediate; black markings of upper-parts.

much as in Red Grouse but usually clearer and more contrasted ; under-parts paler than in Red Grouse especially on sides of head, chin and throat ; toes covered with down. Down is replaced by feathers of juvenile plumage.

Juvenile. Male and female.—Upper-parts much like adult male summer but more barred yellow and bars rather finer ; throat and breast and flanks yellow-buff with rather narrow black-brown bars, feathers with small white tips ; centre of breast, belly and under tail-coverts buffish or dull white, more or less marked dusky ; all tail-feathers much as upper-parts ; primaries brown mottled pale buff on outer and edge of inner webs ; secondaries brown edged, barred and mottled pale buff especially on outer webs, inner secondaries more like upper-parts ; wing-coverts much like upper-parts but more closely barred yellow-buff and with rather conspicuous small white wedge-shaped tips.

First autumn.—Like adult autumn but rather more buffish on upper-parts and always a considerable number of juvenile body-feathers retained as well as some upper tail-coverts and inner secondaries and greater coverts ; primaries in male as well as female usually with thicker black shaft-lines than adult and often speckled ; outer webs of some secondaries and greater coverts often with patches of grey-brown ; outer primary-coverts often speckled black-brown ; upper tail-coverts often with black-brown bases. The juvenile plumage is moulted July–Sept. as in Capercaillie (see p. 853, footnote) ; 1st and 2nd primaries are white and like the first autumn primaries. *First winter and first summer.*—Like adults and usually impossible to distinguish with certainty when completely moulted, but sometimes black speckling on primaries or outer primary-coverts distinguishes them. N.B.—In course of autumn moult there is great mixture of plumage, winter and autumn feathers both growing before juvenile are all shed.

Measurements and structure.—♂ wing 190–200 mm. (1st autumn 182–195), tail 96–112, tarsus 29–36, bill from nasal groove 10–12 (17 measured). ♀ wing 178–195, tail 90–102. Primaries : 3rd longest, 4th as long or 1–3 mm. shorter, 1st 38–48 shorter, 2nd 4–10 shorter, 5th 4–8 shorter. Rest of structure as in Red Grouse.

Soft parts.—Bill black ; claws dark horn-colour ; iris brown ; bare skin over eye red.

CHARACTERS AND ALLIED FORMS.—Male and female *L. m. millaisi* are paler and purer grey in autumn plumage than other forms and female in summer is of rather richer golden-buff and has usually narrower black bars. *L. m. mutus* (N. Europe) is rather larger and has in summer male upper-parts darker and more finely barred and vermiculated buff than in *L. m. millaisi* and many winter feathers are retained, in autumn both sexes considerably buffer than *L. m. millaisi*, in summer female upper-parts have more black and tips of feathers are much vermiculated grey-white, black bars on under-parts wide and tips of feathers white ; *L. m. islandorum* (Iceland)

has larger bill and in autumn is dark buff-brown ; *L. m. reinhardi* (Greenland) is much like last but with smaller bill and female summer has buff of under-parts paler ; *L. m. helveticus* (Alps) male summer is often much like *L. m. millaisi* but sometimes browner and in autumn considerably more buff, female summer has under-parts paler buff-yellow and black bars wider ; *L. m. pyrenaicus* (Pyrenees) male summer more barred with buff and paler on upper-parts than *L. m. millaisi*, in autumn pale sandy-buff less grey, female summer like *L. m. helveticus* ; *L. m. hyperboreus* (Spitsbergen, Franz Josef Land) is much larger than other forms ; other forms are found in Far East and America. *Lagopus lagopus* has considerably deeper and wider bill. Ptarmigan distinguished from other British game-birds by its white wing-feathers.

FIELD-CHARACTERS.—In summer affecting higher stony mountain tops in Scottish Highlands, but descending to a lower level in winter. Pure white plumage of winter unlike that of any other resident British bird. From spring to autumn white under-parts and white on wings and tail as well as ash-brown—not ruddy—upper-parts and its smaller size distinguish it from Red Grouse. Crouches motionless on approach of danger and at all seasons its cryptic coloration makes detection difficult on ground, but in flight—which resembles that of Red Grouse—the white in its plumage is conspicuous. Call a prolonged harsh frog-like croak.

BREEDING-HABITS.—Only found on moorlands at high elevations. *Nest*.—Mere hollow in stony soil, often sheltered by rock, with scanty lining. *Eggs*.—Usually 6 to 10, but 12 said to have occurred, smaller than those of Red Grouse and generally with paler ground, while blotches are often dark chocolate rather than red-brown. Average of 100 Scotch eggs, 43.58×31.02 . Max. : 49.5×29.6 and 46×32.6 . Min. : 39.5×29.7 and 42.4×29 mm. *Breeding-season*.—Latter half May and early June. *Incubation*.—By female alone. Period said to be nine days longer than that of Red Grouse (Millais). Single brooded.

FOOD.—Shoots and leaves of *Vaccinium myrtillus*, also less frequently *V. vitis-idaea*, *Calluna vulgaris*, *Empetrum nigrum*, *Salix* and seeds of various Juncæ and Cyperacæ. In autumn also berries of *Empetrum nigrum*, etc.

DISTRIBUTION.—Confined to *Scotland*.—Resident. On high mountains of mainland from Ben Lomond north, also a few in Jura, Skye, Lewis and Harris. Extinct Orkneys, Arran, Dumfries. Unsuccessful attempts at introduction into Ireland have been made.

DISTRIBUTION.—*Abroad*.—Replaced by allied subspecies in Scandinavia to north Russia, Alps to southern Bavaria, Carinthia and Styria, the Pyrenees, Spitsbergen, Franz Josef Land, Iceland, Greenland, Arctic America, Aleutian Islands, Siberia and north Japan.

FAMILY PHASIANIDÆ.

Contains the Pheasants, Partridges, Quails. Nostrils never hidden by feathers, tarsi bare, toes bare, not laterally pectinated. Tarsus in males often with spurs or blunt protuberances. Almost cosmopolitan.

Key to genera of Family PHASIANIDÆ.

- | | | |
|---|---|---------------------------|
| 1 | { Tail very long, graduated | <i>Phasianus</i> , p. 869 |
| | { Tail short, more or less rounded 2 | |
| 2 | { First primary as long as second or longer | <i>Coturnix</i> , p. 879 |
| | { First primary shorter than second 3 | |
| 3 | { Rectrices usually 18, side-feathers normal | <i>Perdix</i> , p. 874 |
| | { Rectrices normally 14, side-feathers very wide at tip | <i>Alectoris</i> , p. 882 |

Genus PHASIANUS L.

PHASIANUS Linnæus, Syst. Nat., ed. x, i, p. 158 (1758—Type by *tautonymy* and subsequent designation *Phasianus*, i.e. *Phasianus colchicus*).

Tail very long, wedge-shaped, graduated, 18 rectrices. Nostrils bare, i.e. not covered by feathers. 1st primary as long as 8th or longer, 4th and 5th longest. Sides of head bare in male, with a verrucose covering. Tarsus bare, that of male with spur. Sexes different in size and colour. Eggs unspotted. One, or if *Phasianus versicolor* is looked upon as a species, two, species in numerous subspecies from western Asia east to Japan, Yunnan and Formosa.

PHASIANUS COLCHICUS*

490. *Phasianus colchicus* L.—THE PHEASANT.

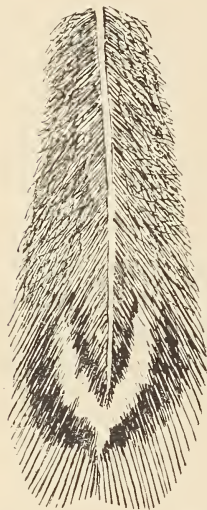
PHASIANUS COLCHICUS Linnæus, Syst. Nat., ed. x, i, p. 158 (1758—"Habitat in Africa, Asia." Africa is wrong! Restricted typical locality: Colchis).

Phasianus colchicus (Linnæus), Yarrell, III, p. 91; Saunders, p. 499.

DESCRIPTION.—*Adult male*.—*Winter and summer*.—*Ph. c. colchicus*.—Crown glossy bronze-green; fore-head, line over eye, nape, back of neck and base of neck all round and chin and upper-throat dark glossy green; middle of sides of neck and throat glossy purple shading into greenish; ear-coverts black-brown (feathers of crown somewhat long and on each side of back of crown above ear-coverts an erectile tuft of rather square-tipped feathers); mantle and scapulars deep burnished copper, feathers of upper-mantle with a

* Evidently *Phasianus colchicus colchicus* L. was the form first introduced into England. Afterwards the Ring-necked Pheasant, *Ph. colchicus torquatus*, and here and there several allied forms were acclimatized, and they have so freely mixed with the old race that hardly any pure *colchicus* can now be found, and most or all British Pheasants are now mongrels mostly with white ring on neck. We therefore treat the bird binominally.—E.H.

U-shaped tip and narrow edging of purplish-black and hollow black centres, those of rest of mantle and scapulars fringed reddish-purple and with brown-black centres with pale buff shafts, oval lines and mottlings; feathers of back with broad reddish-purple tips with a very narrow purplish-green subterminal line and rest of feather (mostly concealed) black-brown mottled brown-buff and with pale buff shafts; rump and upper-tail coverts same but tips of feathers elongated and of loose structure with more greenish-purple and centres more uniform buff-brown speckled black; lower, (concealed) upper tail-coverts buff-brown mottled black and widely



Feather from rump of adult male British Pheasant.

edged rufous; breast, sides and flanks deep burnished copper, feathers widely margined blackish purplish-blue, centres of feathers dull black with buffish shaft-lines; middle of breast black, feathers tipped deep green-purple; centre of belly, tibia and under tail-coverts black, feathers edged and tipped rufous, broadly on tail-coverts; axillaries and under wing-coverts brown-buff with wavy lines and mottlings of dusky-black; tail: central pair with central portions and tips buff-brown with widely-spaced narrow black bars, broad fringed edges of rufous glossed reddish-purple, next four pairs with outer webs barred black and edged rufous-purple and inner webs usually heavily mottled black, outer feathers with a little rufous edging at base and a few bars, and outer webs much mottled black; primaries brown with mottled pale buff bars; secondaries same but outer webs washed buff; primary and greater coverts much as secondaries but with pale buff oval lines and mottlings rather than bars; rest of wing-

coverts buff, inner median and greater and innermost secondaries edged rufous-purple and with black centres lined pale buff (some coverts with slight glossy greenish tinge subterminally), upper lesser coverts with buff-lined black centre not concealed by narrow buff tips.

Ph. c. torquatus.—Head like *Ph. c. colchicus* but with somewhat ill-defined white eye-stripe and white ring round base of neck, incomplete in front and not always complete at back; margins of feathers of upper-mantle buffish-yellow; lower part of mantle with central part of feathers more contrasted whitish-buff and black than in *Ph. c. colchicus*; feathers of back and rump with long tips of greyish-green with subterminal bright glossy-green bands, sides of back greyer and bluer, tips of upper tail-coverts buffish-green and patches at sides of rump rusty-orange; concealed upper tail-coverts closely barred black; feathers of breast more narrowly edged purple-black and tips more bifurcate than in *colchicus*; sides and flanks

yellow-buff with spot-like purple tips; tail: ground colour of central part of feathers paler and more olive and black bars broader than in *colchicus* and on both webs of all feathers except outermost where they are mostly obsolete, bars extended to edges of feathers as dark rufous-purple; wing-coverts less buff and more pale slate-grey (sometimes bluish) than in *colchicus*. N.B.—British Pheasants are a mixture of the two races and, though usually more like the old English Pheasant (*Ph. c. colchicus*) than the Chinese Ring-necked Pheasant (*Ph. c. torquatus*), now usually show some white ring round neck but often this is incomplete and sometimes merely indicated by some white tips; rump and upper tail-coverts usually a mixture of the two forms; wing-coverts often with some blue-slate; upper-mantle and flanks usually dark and more like *Ph. c. colchicus*. There is one complete moult in late summer and early autumn, usually complete in Sept. but sometimes not quite complete in Oct.

Adult female.—Crown black, feathers edged at tip and with broken bars of pinkish-brown; back of neck rather pearly-pink with black subterminal bars (often spot-like), feathers usually with slight purple tips; upper-mantle rufous-chestnut, feathers with large hollow black centres, pearly-pink tips narrowly edged black and usually a very narrow purple or green spot or edge; rest of upper-parts black, feathers margined pale buff and brown, which is mottled black on mantle and scapulars, latter having large bright brown subterminal patches; chin and upper-throat buff often tinged pink; lores and feathers over eye pinkish-buff (those immediately round eye whitish) very narrowly margined black giving a speckled appearance; sides of neck, base of throat and upper-breast rufous-pink, feathers with black spot-like centres and margined pearly-pink, and tips very narrowly margined black and on breast speckled black; sides and flanks same but not so rufous, feathers with several black bars and tips more buff with wavy pale brown vermiculations; rest of under-parts buff with wavy pale brown vermiculations; axillaries and under wing-coverts pale brown barred and tipped buff; tail-feathers shaded rufous-brown, edges buff-brown vermiculated blackish, with broad irregular black bars intersected with buff-brown, those on central feathers rather widely spaced and not reaching edges, on outer ones closer and right across; primaries as male but buff bars usually better defined; secondaries barred pale buff and brown-black mottled rufous-brown; primary-coverts barred brown-black and pale buff; wing-coverts mottled and freckled pale brown and with black centres broken into bars or barred pale buff, inner median and greater and inner secondaries subterminally bright brown as scapulars. N.B.—Females (usually, or perhaps always, with injured or diseased ovaries) occur with varying amount of male plumage (sometimes with spurs). Hybrids with Black Grouse, Capercaillie and domestic fowl occur while a fairly frequent buff or cream-coloured variety has been called the Bohemian Pheasant.

Nestling.—Closely covered with soft down; tarsi and toes bare. Fore-head and sides of crown buff to yellow-buff with blackish line or spots down sides, centre of crown dark red-brown to blackish-brown; nape rufous; back of neck buff to yellow-buff with short blackish line in centre; rest of upper-parts rufous-buff with three wide black lines and wings with black blotches; sides of head pale yellow-buff to pale buff with a brownish streak from base of upper mandible and a black spot on ear-coverts; under-parts buff-white to pale buffish-yellow sometimes with a tawny tinge at base of throat. Down is replaced by feathers.

Juvenile. Male and female.—Crown and back of neck dark brown, feathers with subterminal pale buff marks giving a spotted appearance; mantle and scapulars brown-black, feathers with margins and central streaks of buff to pale buff, those of upper-mantle and base of back of neck more or less tinged rusty-rufous; back, rump and upper tail-coverts browner (less black) and with rather more pale buff margins and centres and often bars; sides of head pale buff minutely speckled black; chin pale buff; sides and base of throat same but streaked and with concentric lines of dark brown; flanks same but with thicker concentric lines or broken bars of brown to black-brown; tail-feathers small and narrow, buff and rufous closely barred black; wing-feathers much as adult female but with pale buff barring; wing-coverts as scapulars but with larger centres, and greater often with bars of pale buff.

First winter.—Like adults. The juvenile plumage is completely moulted commencing when bird is about half-grown, but two outer primaries, which are not full-grown when inner primaries and body commence to moult, and are like adult except for more pointed tips, are not shed. Moult often not quite complete Nov. and even Dec.

Measurements and structure.—♂ wing 235–260 mm., tail: central 420–520, outermost 85–115, tarsus 60–78, bill from feathers 28–32 (12 British measured). ♀ wing 210–232, tail: central 255–290. Primaries: 4th longest, 5th usually as long sometimes 1–2 mm. shorter, 3rd and 6th 2–6 shorter, 2nd 6–20 shorter, 1st 20–40 shorter; tips pointed, outer webs narrow and slightly serrated. Innermost secondaries shorter than 10th primary, inner longest ones between 6th and 8th, tips rounded. Tail much graduated, outermost feather very short, central very long, 18 feathers, tips tapering and pointed, central feathers laterally arched. Tarsus stout, with, in male, a strong conical spur at back. Hind toe short, three front ones rather long and slender, connected at base by small web; claws strong, slightly curved. Bill strong, upper mandible curved, edges and tip thin-edged and overlapping lower mandible, which is shallow and nearly straight. Nostrils oval, protected by an arched operculum. Lores and large space round eye in male with a few short feather-tufts and a line of short feathers under eye, but otherwise bare skin covered with small papillæ and extended under eye as a wattle.

Soft parts.—Bill pale greenish-yellow ; legs and feet horn-grey, tinged brown ; iris hazel ; bare skin round eyes bright vermillion.

CHARACTERS AND ALLIED FORMS.—Numerous forms have been separated and males of those recognized may be briefly grouped as follows : (A) more western forms with *rufous rump and narrow bars on tail* ((a) no white collar and brownish wing-coverts) *Ph. c. colchicus* (S.W. side of Caucasus range, basins of Rion and Chorokh rivers), *Ph. c. septentrionalis* (N. side of Caucasus range from Sea of Azoff to Caspian) and *Ph. c. talischensis* (S.W. corner of Caspian), ((b) no white collar and whitish wing-coverts) *Ph. c. persicus* (S.E. corner of Caspian) and *Ph. c. principalis* (N.W. Afghanistan, S. Turkestan), ((c) small white collar or traces of it and whitish wing-coverts) *Ph. c. zarudnyi* (W. Bokhara, Oxus river), *Ph. c. zarafshanicus* (Zarafshan), *Ph. c. bianchii* (Upper Oxus), *Ph. c. chrysomelas* (Delta of Oxus) and *Ph. c. shawi* (W. Chinese Turkestan), ((d) broad white collar, whitish wing-coverts, rufous rump with deep greenish-purple gloss) *Ph. c. turcestanicus* (Russian Turkestan, N.E. Aral Sea and Syr Daria valley) and *Ph. c. mongolicus* (Kirghiz) ; (B) intermediate form with *rump buffish-green mixed with rufous at sides and tail-coverts, bars on tail rather broad, (wing-coverts brown-buff, no white collar)* *Ph. c. tarimensis* (E. Chinese Turkestan) ; (C) more eastern forms with *greenish or grey-blue rump with rusty-orange patches at sides, broad bars on tail, and blue-grey wing-coverts* ((a) no white collar) *Ph. c. vlangalii* (E. Tsaidam), *Ph. c. strauchi* (S. Kansu to Tsinling Mts.), *Ph. c. süehshanensis* (Süehshan), *Ph. c. elegans* (E. Tibet to S. Shans) and *Ph. c. decollatus* (S.W. China), ((b) with incomplete white collar) *Ph. c. torquatus* (E. China), *Ph. c. formosanus* (Formosa) and *Ph. c. satscheuensis* (W. Kansu), ((c) with complete and broad white collar) *Ph. c. hagenbecki* (extreme W. Mongolia), *Ph. c. pallasi* (N. and central Manchuria, Ussuriland) and *Ph. c. karpowi* (S. Manchuria, Korea). *Phasianus versicolor* (Japan) has dark green mantle and under-parts and greenish rump. Pheasant is distinguished from other British game-birds by its long, graduated, narrow tail.

FIELD-CHARACTERS.—For the most part a semi-domesticated bird of parks, woodlands and game-preserves, which in most districts cannot maintain itself in absence of preservation and nurture. Outstanding feature, alike of burnished copper-coloured male and more soberly plumaged buff female, is long tail which identifies Pheasant under all circumstances, whether feeding on grass or among growing crops, as it runs crouching for cover, or crosses from point to point with rapid direct and noisy flight. Crow of male is a far-sounding, harsh “koch-koch” which is followed by a beating of wings.

BREEDING-HABITS.—A woodland haunting species at night but straying over meadows and on to moors during day. *Nest*.—Hollow

in ground often in a hedgerow, carelessly lined with a few dead leaves, etc. : occasionally a nest of some other species in a tree up to 30 ft. from ground is used. *Eggs*.—Usually 8 to 14 or 15, uniform olive-brown normally, but exceptionally pale blue in colour. Average of 35 eggs, 45.93×36.04 . Max. : 49.2×37 and 48×39 . Min. 39×36.5 and 46.8×34.5 mm. *Breeding-season*.—First eggs are generally laid early in April and become general a fortnight later. *Incubation*.—By female only normally. Period 23–25 days. Single brooded, but owing to artificial conditions many late broods are hatched off and fresh eggs have been found in October.

Food.—Very varied, both animal and vegetable. Under latter head are included grass, tender shoots, bulbous roots of *Ranunculus*, *Polypodium*, hazel nuts, acorns, corn, hawthorn berries, beech mast, peas, beans, potatoes, plums, apples, pears, wild strawberry and berries of *Daphne*, currant, elder, mistletoe and blackberry ; seeds of many plants (*Galium*, *Rumex*, *Ranunculus*, *Taraxacum*, *Plantago*, *Galeopsis*, *Chenopodium*, *Brachypodium*, *Silene*, *Polygonum*, etc.). Also mollusca (small white slugs, and snails), earthworms, insects (coleoptera, including *Lochmæa suturalis*, larvæ of lepidoptera, diptera, hymenoptera (ants and *Ichneumon*), orthoptera, etc.) : oak spangles (*Neuroterus*), while exceptionally lizards (*Lacerta agilis*), slow-worms and vipers have been swallowed and twice male birds have been killed by swallowing field-voles.

DISTRIBUTION.—*British Isles*.—Resident. Introduced in England before 1066, in Scotland and Ireland about five hundred years later. Now generally hybridized with *Ph. c. torquatus*, introduced about 1785, and other races more recently. Generally distributed but not Shetlands and unsuccessfully introduced Orkneys. Scarce Ireland in places not preserved.

DISTRIBUTION.—*Abroad*.—Various Pheasants have been introduced into almost every part of Europe and many suitable places in N. America. In no part of Europe are they indigenous. True home of *Ph. colchicus colchicus* is in west parts of Transcaucasia, basins of rivers Rion and Chorokh, or districts round east and south-east shores of Black Sea generally, not further north than Sukham-kale. Represented by more or less closely-allied forms in Caucasus, east Transcaucasia, Talysch, and many parts of west, north, and central Asia.

Genus PERDIX Briss.

PERDIX Brisson, Orn., I, pp. 26, 219 (1760—Type by tautonymy *Perdix cinerea* = *Perdix perdix*).

Nostrils not covered by feathers. Tail rounded, 16 to (usually) 18 rectrices. 4th and 5th primaries longest. Tarsus bare, no spurs. Sexes not strikingly different. Eggs unspotted. Three species, one in Europe, two in northern Asia.

PERDIX PERDIX

491. *Perdix perdix perdix* (L.)—THE COMMON PARTRIDGE.

TETRAO *PERDIX* Linnæus, Syst. Nat., ed. x, i, p. 160 (175—Europe. Restricted typical locality : Sweden).

Perdix cinerea Latham, Yarrell, III, p. 105 ; Saunders, p. 501.

DESCRIPTION (Plate 13). *Adult male. Winter.*—Fore-head, lores, stripe over eye, chin and throat uniform yellowish-chestnut, paler on throat (a few black feathers at base of culmen and a small patch of white immediately under eye) ; crown, nape and ear-coverts buff-brown, feathers basally blackish and distally with narrow drop-like median streaks of buff, those immediately adjoining chestnut at sides of fore-part of crown greyish ; back and sides of neck and upper-mantle grey more or less washed rufous-buff with fine wavy bars of black ; mantle, back, rump and upper tail-coverts much more buff and feathers with dark chestnut penultimate sagittate bars becoming wide on rump and upper tail-coverts ; breast grey much purer than back of neck and only occasionally tinged buff with very fine wavy black bars, feathers at sides of breast with penultimate dark chestnut bands ; flanks more tinged buff, chestnut bands very broad and feathers with fine whitish shaft-lines ; in middle of lower-breast a large horse-shoe shaped patch of dark chestnut, feathers having long chestnut tips and white bases, in centre of horse-shoe grey finely barred black ; middle of belly and vent white ; under tail-coverts pale buff speckled black, longer feathers with whitish shaft-lines and bases somewhat chestnut ; axillaries and outer under wing-coverts white finely speckled dusky-black, rest of coverts white ; tail chestnut, narrowly tipped buff, central two pairs pale buff thickly vermiculated and barred brown-black, with chestnut shaft-streak of varying width, next pair or two with chestnut centres and vermiculated tips and edges ; primaries and primary-coverts dark brown with pale buff, widely spaced bars narrow and often broken into spots ; secondaries more vermiculated and tinged rufous on outer webs and tips and inner edges greyish and buff ; innermost secondaries, scapulars and wing-coverts with conspicuous pale buff median stripes, tips buff with very fine wavy black bars, basal portion of feathers chestnut and black, with widely-spaced, narrow, buff bars but these absent from median and lesser coverts. This plumage is acquired by complete moult July to Nov., often not quite complete Dec. *Summer.*—A partial moult varying in individuals and confined to comparatively few feathers chiefly on neck, upper-mantle and throat and here and there one on body takes place May–June, sometimes April. New feathers on sides and back of neck buffish-grey with pale shaft-lines. Abrasion causes upper-parts to become greyer and less buff in summer than when plumage is fresher.*

* A variable but frequently recurring rufous variety (♂ and ♀) has been named *Perdix montana* Brisson, Orn., I, p. 224, 1760.

Adult female. Winter.—Head like male but chestnut usually rather paler and crown rather more spotted; back of neck and upper-mantle much browner than male and only tinged grey with varying amount of pale buff shaft-streaks (often drop-shaped on sides of neck) and some broad buff bars; rest of upper-parts browner less grey than male and penultimate sagittate band black-brown or dark chestnut-brown (only occasionally so bright chestnut as male); under-parts as male but breast rather more tinged buff, horse-shoe mark usually white with only a few chestnut tips; tail, primaries, secondaries and greater coverts as male; median and lesser coverts, innermost secondaries and scapulars with less chestnut, bases being dark brown or black with widely-spaced pale buff bars. This plumage is acquired by complete moult as in male. *Summer.*—A partial moult, varying in individuals in extent but



The Common Partridge (*Perdix p. perdix*). Left-hand feathers—median coverts of adult female and male; right-hand, tips of 1st primaries of adult and 1st winter.

more general than in male and often involving besides varying number of body-feathers a few wing-coverts, takes place March to May. New feathers at back and sides of neck and lower-throat with pale shaft-streaks with drop-like spots often margined blackish, those on rest of upper-parts brown-black narrowly tipped buff and with widely-spaced and narrow pale buff bars, those on breast, base of throat and base of sides of neck broadly barred brown-black and greyish-white and those on sides of breast and flanks broadly barred and marked buff and brown-black.

Nestling.—Closely covered with soft down, shorter on head; tarsi and toes bare. Crown chestnut with a few small black spots sometimes extending to lines; back of neck with a wide black line down centre, at sides pale buff marked black; rest of upper-parts pale buff with some rufous and black blotches or ill-defined lines, at base of wings a spot, and on rump a patch, of chestnut; fore-head and sides of head pale yellow-buff (sometimes tinged rufous) with spots, small blotches and lines of black; chin and throat uniform

pale yellow-buff; rest of under-parts slightly yellower, bases of down sooty. Down is replaced by juvenile feathers.

Juvenile. Male and female.—Crown black-brown finely streaked buff, each feather having buff shaft-streak; back of neck, mantle, back, rump and upper tail-coverts buff-brown with whitish to pale buff shaft-streaks inconspicuously margined blackish; lores and sides of head dark brown streaked whitish; chin, throat and centre of belly whitish to pale buff; breast, sides and flanks and under tail-coverts brown-buff slightly paler than mantle and with whiter shaft-streaks, faintly margined brown on flanks; tail much like adult but feathers tipped buff and with subterminal dusky bar and spots and central ones speckled and barred dusky; primaries brown with pale buff tips and widely spaced bars on outer webs; secondaries with pale buff bars extending across both webs and vermiculated brown, shafts pale buff; scapulars, inner secondaries and wing-coverts brown-buff with wide brown-black bars and mottlings and pale shaft-streaks widening to white spots at tips of feathers.

First winter. Male and female.—Like adults and not to be distinguished when moult is complete except by more pointed tips of 1st and 2nd primaries. Females sometimes have more chestnut on breast than adult females. The juvenile plumage is completely moulted commencing when bird is about half grown, but two outer primaries, which are not full grown when inner primaries and body commence to moult, and are like adult except for more pointed tips are not shed. Moult sometimes not complete until Jan.

Measurements and structure.—♂ wing 150–162 mm., tail 73–83, tarsus 38–42, bill from feathers 13–16 (22 British measured). ♀ wing 150–158, tail 73–78. Primaries: 3rd and 4th longest, 5th as long or 1–3 mm. shorter, 1st 12–20 shorter, 2nd 2–10 shorter, 6th 3–8 shorter; outer webs of 1st to 7th very narrow, of 2nd to 7th emarginated basally and inner webs of 1st to 5th emarginated basally. Tail rounded, 18 feathers, tips rounded. Longest upper and under tail-coverts nearly as long as tail. Hind toe small and elevated, three front ones slightly webbed at base, claws little curved and somewhat dilated. Bill stout, culmen curved and edges and tip of upper thin and extending beyond lower mandible, which is flat and shallow. Nostrils covered by an oblong operculum. Behind eye a patch of bare skin.

Soft parts.—Bill greenish horn-colour; legs and feet (ad.) grey tinged yellowish-flesh, (juv.) yellow; iris brown; bare skin behind eye red.

CHARACTERS AND ALLIED FORMS.—*P. p. armoricana* (Brittany) is small and has upper-parts more buff-brown than in *P. p. perdix*; *P. p. hispaniensis* (Pyrenees, N.W. Spain) has wavy bars on breast and neck blacker and coarser with often pale shaft-lines on back of neck of male and drop-like spots in female in winter, and in both sexes broad bars on upper-parts and wing-coverts are less chestnut and

more black-brown ; *P. p. sphagnetorum* (Moors N.E. Holland and adjacent part Germany) is very dark with much black on upper-parts and darker than last on breast ; *P. p. italica* (Italy) is rather darker than *P. p. perdix* and has browner and less chestnut penultimate bars on upper-parts but is not so dark as *hispaniensis* ; *P. p. lucida* (Poland, Baltic Provinces) is slightly, and *P. p. robusta* (most Russia and W. Siberia) considerably, paler and greyer on upper-parts (especially rump) than *P. p. perdix* ; *P. p. furvenscens* (Talish), *P. p. canescens* (Transcaucasia) and *P. p. arenicola* (S.W. Siberia) have also been described. Yellowish-chestnut throat, vermiculated grey breast, dark chestnut tail and horse-shoe mark on breast and penultimate bars on upper-parts and flanks distinguish Common Partridge from other British game-birds.

FIELD-CHARACTERS.—A bird of cultivated ground generally, but most abundant in corn-growing districts and light lands. Easily identified by its rotund form, short grey neck, brownish-grey upper-parts and chestnut horse-shoe patch on lower-breast. Runs quickly ; in mating season a bird often chases another—a rival or prospective mate—for a considerable distance. Crouches when alarmed, and is then difficult to detect on bare ground. Like Grouse, very solicitous for young brood, endeavouring to distract attention from chicks by alluring antics and loud cries. Gregarious ; young remain with parents until advent of pairing season in early February. Flight swift, direct and noisy, accomplished by rapid wing-beats followed by glide on rigid downward curving wings. Cry of male a loud and very hoarse “ caer-wit, caer-wit.”

BREEDING-HABITS.—Haunts open country, meadows, cultivation and waste lands, most plentiful on light soils. *Nest*.—A hollow in ground, often by roadside or near hedgerow, but also sometimes in open fields, lined with grasses and dead leaves and sheltered by growing vegetation. *Eggs*.—Rather pyriform in shape, 9 or 10 to 20 as a rule, but much larger numbers (up to 40) on record, probably produce of two hens : uniform olive-brown in colour with occasional whitish or blue varieties. Average of 100 British eggs, 36.79×27.47 . Max. : 38.9×28.4 and 37.7×29.4 . Min. : 33.8×26.3 and 37.5×25.7 mm. *Breeding-season*.—In most cases during end April and early May, but exceptionally from beginning of April in England. *Incubation*.—By female only. Period 24–25 days, though Saunders gives 21–23 days. Single brooded.

FOOD.—Chiefly shoots and leaves of grass and clover as well as seeds of many species including *Polygonum*, *Trifolium*, *Alchemilla*, *Galium*, *Spergula*, *Persicaria*, *Poa*, etc. Turnip leaves, young shoots of heather, bramble and blaeberry, hawthorn berries and corn also eaten. In spring and summer insects are also taken, including diptera (*Tipulidæ* and larvæ), coleoptera and hymenoptera (ants and their pupæ being very favourite food). Also aphides. Once recorded as eating pears on tree!

DISTRIBUTION.—*British Isles.*—Resident. Generally distributed, but local in Scotland, not present Shetlands, but introduced (not successfully) O. Hebrides and Orkneys. Becoming scarce Ireland.

DISTRIBUTION.—*Abroad.*—Distributed over greater part of Europe, and replaced by closely-allied forms on alpine meadows of Pyrenees and north Spain, as well as in eastern Europe and western Asia, east to foot of Altai Mountains.

Genus COTURNIX Bonn.

COTURNIX Bonnaterre, Tabl. Enc. et méth., I, pp. lxxxvii, 216 (1791—Type by tautonymy *Coturnix communis*=*Coturnix coturnix*).

Very much smaller than *Perdix*, smallest British game-bird. Plumage less rich and full than in *Perdix*, shape of wings very different, 1st primary as long as 2nd or longer. Secondaries very much shorter. Tail less than half length of wing, with 12 rectrices, in some tropical species only 10. No spurs. Sexes easily distinguishable by colour. Five species in Europe, Asia, Africa, Australia, one extinct in New Zealand. The Palæarctic species in a number of subspecies. Eggs heavily spotted. Migratory and thus unlike all our other game-birds.

COTURNIX COTURNIX

492. *Coturnix coturnix coturnix* (L.)—THE QUAIL.

TETRAO COTURNIX Linnaeus, Syst. Nat., ed. x, i, p. 161 (1758—Europe, Asia, Africa. Restricted typical locality: Sweden).

Coturnix communis Bonnaterre, Yarrell, III, p. 123; Saunders, p. 505.

DESCRIPTION.—*Adult male. Winter.*—Crown black more or less concealed by buff tips to feathers, with a pale buff narrow median streak and rather broader and more whitish-buff streak on each side from base of culmen, over eye to base of neck; back of neck brown to rufous-brown with varying amount of black bars or blotches; rest of upper-parts mostly black with narrow, wavy buff to buff-brown bars and tips of feathers buff-brown vermiculated greyish, feathers of back of neck, mantle, scapulars and down sides of back and upper tail-coverts with very conspicuous, lance-shaped shaft-streaks of pale buff outlined with black but these very narrow on lower part of mantle and absent down centre of back and rump; lores pale buff; from base of mandible, under eyes through ear-coverts and down sides of neck a dark brown to chestnut stripe; chin and throat varying greatly: usually buffish-white with a black



The Quail (*Coturnix c. coturnix*). Adult male.

or black-brown central, wedge-shaped stripe of varying width curving back on each side in a narrow line to ear-coverts (as in flukes of an anchor), at base of throat another narrow band (usually broken in centre of throat) curving back to ear-coverts, feathers of central stripe tipped pale buff, curved lines on sides of throat often ill-defined and sometimes absent, sides of throat often more or less chestnut, sometimes whole chin and throat chestnut and sometimes mostly buff; breast orange-buff to chestnut-buff, feathers tipped and with narrow shaft-streaks of pale buff; sides of breast and flanks with broad and tapering whitish-buff stripes narrowly margined black and sides of feathers dark chestnut to chestnut-buff more or less marked or barred black; rest of under-parts including under tail-coverts pale buff, centre of belly, axillaries and under wing-coverts whitish-buff; tail-feathers brown to blackish narrowly edged and barred pale buff; primaries brown, outer web of 1st edged pale buff, rest very narrowly edged pale buff at tips and rest of outer webs barred buff; secondaries same with buff bars extending across inner webs at tips; primary-coverts brown narrowly edged and tipped pale buff; greater and median coverts olive-brown with narrow shaft-streaks and wavy bars of buff usually outlined blackish, innermost and innermost secondaries with black subterminal patches; lesser coverts uniform olive-brown with narrow edging of buff round bend of wing. This plumage is acquired by complete moult Aug., sometimes completed Sept., but others moult much later and specimens in full moult from Oct. to Jan. are frequent. *Summer*.—A partial body moult takes place Feb. to April and occasionally May. Plumage as winter.*

Adult female.—Upper-parts like male; chin and throat buffish-white with no central black stripe, but curving bands on sides of throat usually indicated and generally broken into series of spots; brown moustachial streak usually present; sides of neck and breast buff to rufous-buff spotted brown-black and with narrow whitish shaft-streaks; flanks as male but not so chestnut; rest of plumage as male.

Nestling.—Closely covered with soft down, shorter on head; tarsi and toes bare. Crown orange-buff with a black spot on forehead and two parallel black lines down centre of crown and nape, joining into one at base of neck and continuing down centre of rest of upper-parts; sides of back of neck buffish-yellow, down tipped dusky; rest of upper-parts orange-buff with a black line on each side parallel to central line and black blotches on wings; sides of head buffish-yellow with a very few narrow black lines or spots (sometimes one small spot only); under-parts buffish-yellow, down at sides of neck and base of throat lightly tipped dusky and bases of down sooty. Down is replaced by feathers.

* A very dark variety occurs with some frequency here and there in south Europe (e.g. Valencia, Spain).—H.F.W.

Juvenile.—Upper-parts much like adult but lance-shaped buff stripes rather narrower ; under-parts like adult female but brown-black spots on breast smaller and sides of feathers of flanks with more regular spot-like bars ; tips of primaries usually somewhat mottled pale buff ; wing-coverts with black subterminal bars usually divided into two spots by pale buff shaft-lines ; rest of plumage like adult.

First winter.—The juvenile plumage is completely moulted except for two outer primaries as in other game-birds and by Sept. or Oct. bird is like adult.

Measurements and structure.—♂ wing 100–112 (rarely 115) mm., tail 32–37, tarsus 23–28, bill from feathers 11–12 (12 European measured). ♀ as male. Primaries : 1st and 2nd longest, 3rd usually 1–3 mm. shorter, sometimes as long, 4th 6–13 shorter, 5th 13–20 shorter, 6th 20–26 shorter ; 1st emarginated inner and 2nd and 3rd outer webs. Outer secondary about as long as 10th primary, innermost between 6th and 7th, tips sharply rounded. Tail very small and hidden by coverts, 10 to 12 narrow feathers, tips rather pointed. Hind toe small and elevated, three front ones slender and slightly webbed at base, claws short, little curved, slightly dilated. Bill small, fairly stout, upper mandible curving to tip and projecting beyond under mandible, which is shallow and straight. Nostrils slit-like, covered by an oblong operculum.

Soft parts.—Bill grey, brownish along ridge of culmen ; legs and feet pale yellowish- or brownish-flesh ; iris pale yellowish-brown.

CHARACTERS AND ALLIED FORMS.—*C. c. japonica* (E. Siberia, N. China, Japan) has in both sexes in winter long pointed feathers on sides of chin and throat and male in summer has chestnut chin and throat ; *C. c. africana* (S. Africa) has rufous sides of head, is darker on upper- and under-parts and rather smaller ; *C. c. confisa* (Canary Is.) is much like last but larger and not quite so dark on under-parts ; *C. c. conturbans* (Azores) is still darker than *C. c. africana* and with more buff-brown and less olive wing-coverts. Distinguished from other British game-birds by small size and pale buff stripes on upper-parts.

FIELD-CHARACTERS.—Affects arable land and rough tussocky pastures by preference. In form a miniature Partridge with sandy coloration and a striped crown. Resembles Partridge, too, in powers of running and mode of flight, but seldom flies far when flushed ; indeed, owing to its secretive habits would often be overlooked were it not for cry of male, a very liquid “wet-mi-lips,” uttered by night as well as day. The responsive cry of the female is a soft “peu, peu.”

BREEDING-HABITS.—Haunts open country : cultivation, grass lands and rough pastures. *Nest*.—A scantily lined hollow in ground frequently in growing corn but also in grass and other crops. *Eggs*.—Usually 7 to 12, but occasionally up to 18, yellowish-white in ground with dark chocolate or umber-brown markings, which may

be bold blotches or sometimes thickly sprinkled spots. Average of 70 British eggs, 30.34×22.83 . Max. : 32.7×23.6 and 29.8×24.5 . Min. : 27.9×22 and 29.6×21.2 mm. *Breeding-season*.—From latter half May through June but fresh eggs have been found in September. *Incubation*.—By female alone. Period variously estimated at 16–21 days from observations in confinement. Single brooded.

FOOD.—Mainly vegetable matter, but insects and their larvæ also taken as well as small land mollusca. Seeds recorded include corn and seeds of *Brassica campestris*, *Lolium*, *Polygonum*, *Chenopodium*, *Spergula*, *Plantago*, *Rumex*, *Stellaria*, *Vicia*, etc.

DISTRIBUTION.—*British Isles*.—Summer-resident, occasionally staying winter. Formerly much more plentiful, especially Lincs. and East Anglia. Now very scarce, but numbers fluctuate. Rare northwards in Great Britain, but has bred as far as Sutherland and Caithness, as well as Orkneys, Shetlands, and O. Hebrides. In Ireland previous to 1850, practically resident and plentiful, now much scarcer and chiefly summer-resident in eastern half.

DISTRIBUTION.—*Abroad*.—Europe and Africa north of Sahara, east to west Asia, exact limit eastwards not yet fully known. Partial migrant, wintering in Mediterranean countries, Africa, and India. Replaced by allied races in Atlantic isles, Africa south of Sahara and east Asia to Japan.

Genus ALECTORIS Kaup.

ALECTORIS Kaup, Skizz. Entw. Gesch. und Nat. Syst. Eur. Thierw., pp. 180, 193 (1829—Monotype "*A. petrosa*" = *barbara*).

Size about same as *Perdix*, to which closely allied. Differs from *Perdix* in colour and number of rectrices, which are 14, and only exceptionally 16 in number; male with a blunt protuberance in place of a spur, female as a rule without any. Plumage harsher, feathers on sides much wider at tip, those on occiput longer. 3rd to 5th primaries almost equal and longest. Sexes alike. Eggs usually spotted. Four species, 3 Palearctic and 1 ranging into northern India, each with several subspecies; 4th species south Arabia.

ALECTORIS RUFA

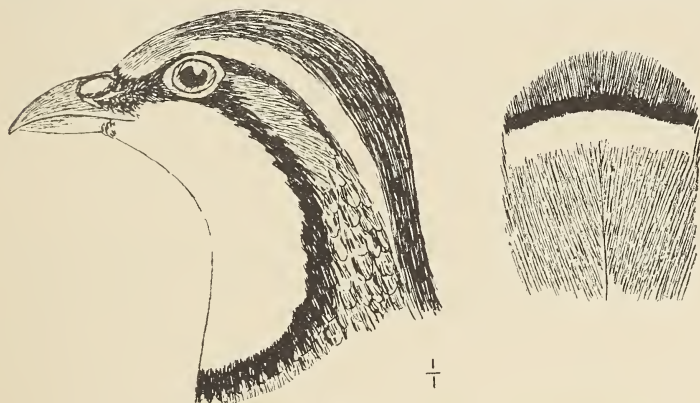
493. *Alectoris rufa rufa* (L.)—THE RED-LEGGED PARTRIDGE.

TETRAO RUFUS Linnæus, Syst. Nat., ed. x, i, p. 160 (1758—S. Europe, restricted typical locality north Italy).

Caccabis rufa (Linnæus), Yarrell, III, p. 115; Saunders, p. 503.

DESCRIPTION (Plate 13).—*Adult male and female*. *Winter and summer*.—Narrow line of black round base of upper mandible, followed by white line on fore-head which extends over eyes and down sides of neck, fore-part of crown and edging of white superciliary stripe blue-grey; rest of crown brown becoming chestnut-brown on nape and back of neck, but latter with edges of feathers

grey streaked black ; upper-mantle chestnut, feathers tipped olive-brown ; rest of upper-parts brown, feathers tipped olive ; a black line through lores, very narrow over and under eyes and extending behind eyes in a prominent circular line round cheeks and sides of throat and widening at base of throat ; at apex of chin and on bases of lower mandible spots of black, otherwise whole chin and throat enclosed by black line dull white ; ear-coverts yellowish-buff with some white and blackish median streaks ; sides of neck adjoining black gorget grey washed brown and sides of feathers streaked black, upper-breast same but with wider black streaks or blotches and narrow whitish streaks and tips ; sides of upper-breast chestnut-



The Red-legged Partridge (*Alectoris r. rufa*). Head of adult and flank-feather.

brown, rest of breast blue-grey but upper feathers more or less edged and washed brown ; feathers of sides and flanks with blue-grey centres edged rufous-buff and divided from broad dark chestnut tips by a narrow bar of pale buff and a penultimate one of black ; rest of under-parts including tibial feathers and under tail-coverts uniform dark orange-buff ; axillaries and under wing-coverts pale orange-buff more or less tinged and mottled brown ; tail-feathers chestnut, central pair as upper tail-coverts but basal part finely vermiculated blackish, next pair often with some black vermiculations basally ; primaries black-brown, shafts yellow-buff, basal part of outer webs olive-brown minutely spotted black, distal part of outer webs (except of 1st primary) with a yellow-buff line ; outer secondaries like primaries, inner ones without yellow-buff line on outer webs ; primary-coverts black-brown, outer webs edged olive-brown minutely spotted black ; rest of wing-coverts and innermost secondaries olive-brown but greater minutely spotted black on outer webs. This plumage is acquired by complete moult Sept. to Nov.*

* A rufous-breasted variety with black chin and throat and a variety with rufous and buff upper-parts and black crown have occurred on a few occasions ; others with varying amount of white on under-parts are less rare.

Nestling.—Closely covered with soft down, much shorter on head; tarsi and toes bare. Fore-head and crown rufous-buff, faintly speckled darker; rest of upper-parts brownish-chestnut speckled black with parallel lines of whitish-buff down centre and each side; sides of head pale buff with small brown line behind eye; rest of under-parts pale buff, whitish on throat. Down is replaced by feathers.

Juvenile.—Crown and nape dark brownish-olive; rest of upper-parts (except scapulars) olive-brown, feathers with small dull whitish tips with brown subterminal bar; lores and line over and behind eye buffish-white; chin, throat and cheeks dull or buffish-white, surrounding feathers (in position of black circular line in adult) more or less mottled blackish at tips; breast olive-brown, feathers with pale buff to whitish shafts and tips; lower-breast dull blue-grey, feathers edged and tipped olive and brown; rest of under-parts pale, dull orange-buff, flank-feathers with broad whitish subterminal bands and narrow mottled brown tips; tail feathers chestnut narrowly tipped pale buff, central pair and tips and edges of rest brown vermiculated black and pale buff; primaries much as adult but basal part of outer webs mottled yellow-buff and speckled blackish, tips buff, extreme tips pale buff with narrow penultimate black line and a pale buff spot near tip on outer web; secondaries same but outer webs more olive-brown, much speckled blackish and distal portions with uneven indentations of yellow-buff spotted and outlined with black; wing-coverts as mantle but with rather large and pale wedge-shaped tips and inner feathers and scapulars with nearly white tips and heavy black blotches and irregular bars above tips especially on inner webs.

First winter and summer.—Like adults and not to be distinguished when moult is complete except by 1st and 2nd primaries which are rather more sharply pointed than in adult and have extreme tips pale buff. The juvenile plumage is moulted in same way as Common Partridge and is complete Nov.

Measurements and structure.—♂ wing 156–165 mm., tail 88–95, tarsus 40–44, bill from feathers 15.5–18 (12 British measured). ♀ wing 147–160, bill 15–17. Primaries: 3rd and 4th longest, 5th usually as long but occasionally 1–2 mm. shorter, 2nd often as long but usually as 6th 1–5 shorter, 1st 8–15 shorter; outer webs 2nd to 7th emarginated and inner ones of 1st to 4th. Tail considerably rounded, 14 feathers, tips rounded. Longest upper-tail coverts as long (or nearly) as central tail-feathers and longest under-coverts as long as outer tail-feathers. Tarsus with a knob-like spur in male. Hind toe small and elevated, three front ones connected at base by web, rather slender, claws slightly curved and dilated. Bill and nostrils as in Common Partridge. Round eyes skin bare.

Soft parts.—Bill, legs and feet and round eyes coral-red (juv. bill brown, legs paler rose); iris brown.

CHARACTERS AND ALLIED FORMS.—*A. r. hispanica* (N.W. Spain,

Portugal) is considerably darker on upper- and under-parts and more slatish, less olive-brown on rump and upper tail-coverts than *A. r. rufa*; *A. r. intercedens* (E. and S. Spain) is more like *A. r. rufa* but paler and rump and upper tail-coverts more slaty; *A. r. australis* (Canary Is.) is much like *A. r. intercedens* in colour but has larger bill. Olive-brown upper-parts, barred flanks, black streaked gorget, red legs and bill distinguish species.

FIELD-CHARACTERS.—Rather larger than Common Partridge which it resembles in build and, speaking generally, in habits too, but is more restricted to chalk-lands and sandy heaths, often perches on low trees, fence-rails and the like, and is even more addicted to running. At close quarters white cheeks and throat bordered by black band, barred flanks, and bright red legs distinguished Redleg at once, but at a distance the two species are much alike. Call, a deliberate harsh “chuck-chucka, chuck-chucka,” is distinctive.

BREEDING-HABITS.—Haunts open country. *Nest*.—A hollow in ground often in hedgerow or under shelter of bush, occasionally on stacks, scantily lined with dead leaves, grasses, etc. *Eggs*.—Usually 12–16, but 17 to 20 on record; yellowish-white to pale yellowish-brown, spotted rather sparingly with ochreous-red and ashy shell-marks. Average of 100 British eggs, 41.37×31.04 . Max.: 43.6×32 and 41.9×32.7 . Min.: 38.6×31.3 and 40×29.5 mm. *Breeding-season*.—Full sets usually not before end April or more often in May. *Incubation*.—By female alone. Period 23–24 days. Single brooded.

FOOD.—Both animal and vegetable matter: insects, including coleoptera, orthoptera, hymenoptera (ants and their pupæ) and diptera; spiders, mollusca (small snails): also grain, seeds, young shoots of growing corn, clover, etc.

DISTRIBUTION.—*England*.—Resident. Introduced Suffolk about 1770, and subsequently many places, now found in Yorks., midlands and southwards, west to Somerset and sparingly north Wales, and by recent introductions in many other parts. Slight evidence of occasional immigration on east and south-east coasts.

DISTRIBUTION.—*Abroad*.—Belgium, France, Italy, to west and south Switzerland, and Balearic Isles. Replaced by very closely-allied forms in Spain, (possibly Corsica), and Canaries, but evidently introduced in Madeira and Azores.

ADDITIONS AND CORRECTIONS

THE following additions and corrections bring the work up to the end of 1923, but it has been found impossible to enumerate the extra-limital allied subspecies which have been differentiated since the various parts of the work went to press, and only the more important additions and corrections to distribution abroad have been inserted. Synonyms given to British birds, where omitted from the body of the work, have been inserted, but not "nomina nuda" nor in most cases mere substitute names.

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- *vii BASI-PTERYGOID.—Substitute as follows : The name used for a pair of bony projections, or processes, from one of the bones of the base of the skull (the basi-sphenoid) which (when present and functional) give support to the pair of pterygoid bones.
- *xiv Upper figure, read "method used by us in measuring the bill from its tip to the *cranio-facial hinge*" instead of "base of skull."
- 3. Lines 1 and 4, for "thigh" read *tibia*.
- 10. **The Raven.**
ALLIED FORM.—*C. c. umbrinus* 1838 must be called *C. c. ruficollis* Lesson, 1831.
- 11. DISTRIBUTION.—Also breeds north Somerset; bred Shropshire 1918 and 1920.
- 14. **The Carrion-Crow.**
Nestling.—Down rather scanty, fairly long, pale dusky-grey; distribution inner supra-orbital, occipital, spinal, femoral, humeral and ulnar (H.F.W.) "Mouth inside bright pink, flanges horn-colour with pink tinge." (J. H. Owen.)
Soft-parts.—Iris of juvenile pale greyish. (F.C.R.J.)
- 15. BREEDING-HABITS.—Probably female alone incubates.
DISTRIBUTION.—Occurred O. Hebrides, Lewis 1909, July 1914, April 1916, N. Uist. Aug.-Sept. 1914, Swanibost Sept. 1914; stated to have bred twice in S. Uist. Recorded breeding off Dublin coast but subsequently shown to be Raven.
- 22. **The Magpie.**
First winter.—Juvenile tail-feathers, or some of them, are also moulted. (H.F.W.)
- 23. DISTRIBUTION.—One (perhaps breeding) Norfolk July 1919, others autumn and winter probably migrants. Increased in numbers locally during the war.
- 28. **The Continental Jay.**
DISTRIBUTION.—Specimens identified—Norfolk, three Jan. 1918, one Oct. one Dec. 1918, Oxford, one Jan. 1917, Sussex, one Dec. 1903, Kent one, Tonbridge 1920.

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29. **The British Jay.**

Summer.—There is a moult of the body-plumage (perhaps only partial) in Jan. and Feb.

Soft parts.—Iris of adult and juvenile bluish-white with very narrow inner ring of brown. (H.F.W.)

30. **The Irish Jay.**

DISTRIBUTION.—Recorded co. Longford 1918.

36. **The Starling.**

DISTRIBUTION.—Statement “has long been common Shetlands” must be referred to the Shetland Starling for which see Vol. I, p. *vi.

46. **The Hawfinch.**

DISTRIBUTION.—Bred Dumfries-shire 1919 and 1922, and seen at various dates Aberdeen 1920.

51. **The Continental Goldfinch.**

One in Brit. Mus. (♂ Weston-super-Mare, Ap. 9, 1913, Whish coll.) is more like this form than the British but it is more likely to be an aberrant British bird than a genuine migrant. (H.F.W.)

52. **The British Goldfinch.**

Nestling.—Down darkish grey, medium length, scanty on ventral and crural tracts; distribution, inner and outer supra-orbital, occipital, spinal, humeral, ulnar, femoral, crural and ventral. Tongue and floor of mouth crimson, posterior angles of tongue paler but not forming definite spots, roof of mouth dark lilac, externally flanges cream-colour. (N.F.T.)

56. **The Siskin.**

DISTRIBUTION.—O. Hebrides, one Flannans, one Lewis, Oct. 1915.

56. **The Twite.**

Loxia Flavivestris parallelicolor Kleinschmidt, Berajah, p. 1 (1921—England) has been described as being browner and darker than the typical form. Compared with a small series of Swedish specimens British breeding birds are sometimes darker buff on the throat and buffer and less whitish on the belly but the difference is very slight and not sufficiently constant to make separation advisable. (H.F.W.).

58. DISTRIBUTION.—Recorded breeding Merioneth 1905. (G. Bolam, Wild Life in Wales, p. 161.)

59. **The Mealy Redpoll.**

Synonym: *Linaria canescens* Gould, B. Europe, III, pl. 193 (1834—winter visitor to England).

61. **The Greenland Redpoll.**

DISTRIBUTION.—Party Nov. and Dec. 1913, Possil Marsh (Clyde).

66. **The Citril Finch.**

Authority (Pall.) instead of (L.), the first description being FRINGILLA CITRINELLA Pallas, Vroeg's Cat. Verzam. Vogelen, etc., Adumbratiuncula, p. 3 (1764—Holland, “rara avis”).

71. **The Linnet.**

DISTRIBUTION.—O. Hebrides, stated to have bred Lewis.

71. **The Serin**

A male from Rottingdean (Sussex), Dec. 6, 1918, in Tring Mus., was thought by Hartert to be an example of *S. c. germanicus* (Vög. p. Fauna, III, p. 2055), but he now agrees that it matches examples of *S. c. serinus* in winter, when owing to greyish fringes to feathers the yellow is duller. (H.F.W.)

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73. DISTRIBUTION.—Norfolk should be five not four and one since (May 1922) making six, Sussex two since (Dec. 1918), one Fair Isle (Shetlands) May 1914. Most occurrences between Nov. and May.
75. **The Northern Bullfinch.**
DISTRIBUTION.—Occurrences recorded Fair Is., Feb. 1914, Nov. to Dec. 1921, Jan. 1922, Shetlands, Oct. and Nov. 1914, Oct., Nov. and Dec. 1919, Jan. to Mar. and one May 3, 1920, Oct. 1920, Caithness, Jan. 1915, Haddington, Jan. 1920 and Oct. 1921, Fifeshire, Nov. 1921, Berwickshire, Dec. 1921.
75. 30 **Pyrrhula pyrrhula nesa** Math. and Ired.—**The British Bullfinch.**
PYRRHULA PYRRHULA NESA Mathews and Iredale, Austr. Av. Record, III., p. 122 (1917—Great Britain).
instead of *P. p. pileata* Macg. which is considered to be merely a substitute name for *Loxia pyrrhula* Linn. and not specially applied to the British bird, though British specimens were described by Macgillivray.
78. Genus **Carpodacus** Kaup.
Hartert adopts *Erythrura* Brehm, Isis, 1828, p. 1276, for this genus but a majority of the B.O.U. List Committee having rejected this change it is not accepted here.
80. **The Scarlet Grosbeak.**
DISTRIBUTION.—One Sept. 8, 1913, Isle of May (additional to those mentioned), three Sept. 1921, Fair Isle.
87. **The Common Crossbill.**
DISTRIBUTION.—Add to breeding dates: Oxon., 1887, Herts., 1911, Kent, 1917, Shropshire, 1916. 1791 Sussex was probably Kent. Has bred regularly Norfolk and Suffolk since 1910 and probably also Hants; bred Dumfriesshire 1918.
89. **The Parrot-Crossbill.**
DISTRIBUTION.—Add to those examined: male, Langham, Norfolk, Sept. 1907.
98. **The Brambling.**
DISTRIBUTION.—Nest and seven eggs found and birds clearly identified Sutherland, May 1920. (C. and T. E. Hodgkin, Scot. Nat., 1920, p. 181; cf. also Brit. B., XIV, pp. 211–212.)
104. **The Tree-Sparrow.**
Synonym: *Passer Arboreus* Forster, Syn. Cat. Brit. B., p. 52 (1817—New name for *Fringilla montana* L., and based on Bewick, Hist. Brit. B., p. 177). This name invalidates the name *Passer domesticus arboreus* (p. 103), and that form must now be called *P. d. rufidorsalis*.
110. **The Yellow Bunting.**
Synonym: *Emberiza citrinella nebulosa* Gengler, Archiv f. Naturg. 85, Abt. A. Heft 5, p. 91 (1920—England, Holland, North France).
115. **The Black-headed Bunting.**
DESCRIPTION.—In adults there is a partial moult in June–July involving varying number of feathers of crown, mantle, upper tail-coverts, chin and upper-breast and usually two innermost secondaries. In males new feathers of crown are brown with black central streak or brown with black bases, of mantle brown with black central streak and often some chestnut-brown basally, of chin mostly pale buff. In females new feathers of crown and mantle are browner than in “full” plumage. A complete moult takes place Nov.–Dec. when plumage becomes as described on p. 115. It is possible that juvenile has first a partial moult (not involving wings and tail), new feathers of upper-parts being in both sexes as described under first winter female (p. 116) and a few months later has a complete moult, but material is insufficient to be certain of this.
117. DISTRIBUTION.—For Brighton (Sussex) about Nov. 3, 1888, read 1868.

121. The Gull Bunting.

Nestling.—Down, grey-brown, long and plentiful; distribution, inner supra-orbital, occipital, spinal, humeral, ulnar, femoral, crural and ventral. Mouth, inside pink, no spots, externally flanges pale yellow. (H.F.W.)

122. DISTRIBUTION.—Breeds locally south Warwickshire, bred Leicestershire 1920. Pair seen Upper Loch Fyne (Argyll.) June 6, 1920.

122. The Oortolan Bunting.

Synonyms : *Emberiza chlorocephala* Gmelin, Syst. Nat. I, 2, p. 887 (1789—Ex Brown, Illustr. and Latham, near London). *Emberiza Tunstalli* Latham, Ind. Orn. I, p. 418 (1790—New name for *E. chlorocephala*, same specimen caught near London described).

DESCRIPTION.—*Summer*.—A few specimens with a fair amount of body-moult in Jan. and Feb. have been examined, but such a moult may be only occasional. (H.F.W.)

124. DISTRIBUTION.—Occurred Isle of May, May 1918, May 1921, Shetlands May 7 and 11, 1919, May 3 and Nov. 16, 1920, Caithness May 3 and 4, 1920, Ross-shire Sept. 1922.

130. The Rustic Bunting.

DISTRIBUTION.—One Lerwick, Shetland, Oct. 6, 1920 (Scott. Nat., 1921, p. 107).

136. The Reed-Bunting.

DISTRIBUTION.—*Abroad*.—Specimens occurring in Punjab are apparently all *E. s. pallidior* (Ticehurst, Ibis, 1922, p. 653).

136. 54. *Emberiza tschusii* compiler Math. and Ired. —The Western Large-billed Reed-Bunting.

EMBERIZA COMPILATOR Mathews and Iredale, Austr. Av. Record, IV, p. 131 (1920—substitute name for *Emberiza palustris* Savi which is preoccupied by *E. palustris* Frenzel 1801) instead of *E. palustris palustris*.

137. 55. *Emberiza tschusii tschusii*.
instead of *E. palustris tschusii*.

141. The Snow-Bunting.

Synonym : *Emberiza montana* Gmelin, Syst. Nat. I, 2, p. 867 (1789—Ex Willughby, Pennant and Latham. "Habitat in Anglia." Descr. of a specimen from Northamptonshire).

145. MIGRATIONS.—Substitute following : Winter-visitors arrive regularly but in varying numbers in northern isles and on east coast, end of first week Sept. to 3rd week Nov., chiefly in Oct. and Nov. (early dates Aug. 18, 1912, Flannans, Aug. 29, 1911, Fair Isle, Sept. 1, 1910, Pentland Skerries). Passage-movements down east and west coasts (more regular and of larger numbers down east) and north and west coasts Ireland to end of Nov., and later under adverse weather conditions. Return migration mid-March to mid-April, extending in Scotland and northern isles to mid-May (late dates, June 4, Flannans; 13, 1886, Aranmore, Donegal; 14, Fair Isle). Very little evidence of passage-movement from and to south coasts. (N.F.T.)

152. The Calandra Lark

JUVENILE.—Feathers of whole upper-parts, tail-feathers except outermost, wing-coverts and wing-feathers evenly and conspicuously margined buff to whitish and blackish subterminally, outermost tail-feathers mostly white as in adult but tinged buff; lores and stripe over eye buffish-white; ear-coverts buff-brown spotted dusky-black; feathers of black patches on sides of lower-throat narrowly edged whitish; feathers of breast with round black penultimate spots; rest of under-parts as adult. (H.F.W.)

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154. The Short-toed Lark.

Nestling.—Down, pale buff, fairly long, not very plentiful (but bird partially feathered). Distribution, inner supra-orbital, occipital, spinal, humeral, ulnar, femoral. Mouth inside: palate orange, rest deep yellow, two lateral black spots at base of tongue and one near tip. (H.F.W.)

155. ALLIED FORM.—*C. b. rubiginosa* which must be called *C. b. hermonensis* extends east to Palestine.

156. DISTRIBUTION.—*Abroad*.—Form occurring in N.W. India in winter is *C. b. longipennis*. (Ibis, 1923, p. 15.)

161. The Wood-Lark.

Nestling.—"Down, grey, almost lavender-grey, long on head and plentiful. Mouth inside orange-yellow, two black spots at base of tongue and another at tip, externally flanges yellowish-white." (F. L. Blathwayt, Brit. B., xiv, p. 116.)

162. BREEDING-HABITS.—*Eggs*.—Clutch 3 common.

DISTRIBUTION.—*Wales*.—Breeds also Montgomery and Salop. *Scotland*—One Isle of May, May 12, 1921, one Sept. 26–27, 1922.

166. 66. *Alauda arvensis intermedia* Swinh.—The Eastern Sky-Lark

ALAUDA INTERMEDIA Swinhoe, Proc. Zool. Soc. London, 1863, p. 89. (Described from migrants from Shanghai)

instead of *A. a. cinerascens* Ehmcke, because the various varieties of Siberian Sky-Larks are considered to belong to one and the same form, the oldest name of which is *intermedia* Swinhoe. This forms ranges in winter not only westwards to N. Africa, but in east to China.

170. The Shore-Lark.

DISTRIBUTION.—One, Isle of May, May 1921.

172. Richard's Pipit.

Synonym: *Anthus maximus* Blyth, in New Ed. of White's Nat. Hist. Selborne, p. 262 (1836—New name for *Anthus Ricardi* [sic] auct., but a specimen "lately caught near London" examined, on which his remarks were based).

DISTRIBUTION.—One Fair Isle, Oct. 2, 1920.

174. *Anthus campestris campestris* (L.)—The Tawny Pipit.

instead of *Anthus campestris* as *A. c. griseus* (Turkestan, Persia, wintering Egypt) has been differentiated.

Nestling.—Down, pale buff, fairly long and plentiful; distribution, outer and inner supra-orbital, occipital, spinal, humeral, ulnar, femoral, crural and ventral. Mouth, inside deep yellow, no spots, externally flanges yellowish-white. (H.F.W.)

179. The Tree-Pipit.

DISTRIBUTION.—Noted Lerwick (Shetland), May 1920

MIGRATIONS.—Summer-residents begin to arrive end 1st week April (early dates, March 17 and 18, 1922, Sussex; 22, 1893; 30, 1913, Berks.; April 1, 1905, Surrey; 1906, Cambs.), main body end of 2nd week to mid-May. Passage-migrants accompanying them seem to travel by east coast and through northern isles up to 2nd week June. Southward movement of summer-residents begins end of July and lasts to about mid-Sept., becoming merged in that of passage-migrants that begin to arrive northern isles 4th week Aug. These appear to travel mainly down east coast, departures lasting throughout Sept. to mid-Oct. (late dates Fair Isle, Oct. 30, 1912; Nov. 9, 1908). (N.F.T.)

179. The Meadow-Pipit.

Synonym: *Anthus communis* Blyth, in White's Nat. Hist. Selborne, New Ed., p. 261 (1836—New name for the "common or meadow pipit" found in England).

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195. **The Blue-headed Wagtail.**
 ALLIED FORMS.—*M. f. campestris* 1776 must be called *M. f. lutea* (Gm.) 1774.
 DISTRIBUTION.—Bred near Penzance (Cornwall) 1923, also Seaford (Sussex) 1922, occurred Ayrshire, June 1920.
197. **The Grey-headed Wagtail.**
 DISTRIBUTION.—One (probably this form) seen near Penzance, May 1923.
197. **The Ashy-headed Wagtail.**
 Spanish and Portuguese males have a well-defined white eye-stripe and have been separated (*M. f. iberiae* Hartert, Vög., p. Fauna, p. 2097) from the Italian *M. f. cinereocapilla*. In Gould's figure of the only known British specimen a short white eye-stripe is shown over the hind part of the eye, but as Italian specimens rarely have a slight eye-stripe though usually it is absent, it is advisable to retain the name *cinereocapilla* for the British bird.
199. **The Black-headed Wagtail.**
Juvenile.—Two examined differ somewhat from each other, one being more buff and the other whiter on under-parts and tips of wing-coverts, latter appear more prominent than is usual in juveniles of other forms. of *M. flava*. (H.F.W.)
199. **The Yellow Wagtail.**
 Synonyms : *Motacilla flava* var. 1 *anglica* Sundevall, Kongl. Sv. Vetensk. Akad. Handlingar Stockholm for 1840, p. 53 (1842—England). *Motacilla Anglorum* Degland, Orn. Eur., I, p. 442 (1849—Simply stated that Prévost used to call *M. rayi* by this name).
 DISTRIBUTION.—Late dates Nov. 30, Dec. 4, 1920, Cumberland.
204. **The Grey Wagtail.**
 ALLIED FORMS.—*M. c. melanope* 1776 must be called *M. c. caspica* (Gm.) 1774.
206. **84. Motacilla alba yarrellii Gould.—The Pied Wagtail.**
MOTACILLA YARRELLII Gould, Birds of Europe, List of Plates, Vol. II, p. 2 (1837—Great Britain)
 instead of *M. a. lugubris* Temm. which is preoccupied by *M. lugubris* Licht., 1819. See Matthews and Iredale, Austr. Av. Rec., IV, p. 132. Synonym (partim) : *Motacilla Lotor* Rennie, Montagu's Orn. Dict., 2ND ed., p. 377 (1831—No locality given, description of the Pied Wagtail, but name meant as a substitute name for *Motacilla alba*, which name is considered to be unsuitable. Linnaeus's name and French and German descriptions of *M. alba* quoted and statement "I have changed the specific to *Lotor*." The name must therefore not be used for the British subspecies).
218. **The Northern Tree-Creeper.**
 DISTRIBUTION.—*Abroad*.—The Tree-Creepers of N. America are forms of *C. familiaris* and not of *C. brachydactyla*.
220. **The Wall-Creeper.**
 DISTRIBUTION.—One seen near Dorchester (Dorset), April 24, 1920 (F. L. Blathwayt, Brit. B., XIV, p. 40).
221. **90. Sitta europæa affinis Blyth.—The British Nuthatch.**
SITTA AFFINIS Blyth, Journ. Asiatic Soc. Bengal, xv, p. 289 (1846—England)
 instead of *Sitta e. britannica* Hart. Because Blyth's name can be adopted from his remarks on the preceding page (288) where differences of *S. e. europæa* were mentioned, which is not the case on p. 289 where the name first appears.
224. **DISTRIBUTION.**—Bred Anglesey, 1921.

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239. **The Scottish Crested Titmouse.**
 DISTRIBUTION.—Stated to have bred for last thirty years in Achnagarry and Glengarry (W. Inverness) (M. Matheson, *Field*, 6, III and 24, IV, 1920; cf. *Brit. B.*, XIV, pp. 21, 45). One (? subsp.) seen Arbroath (Forfar), Sept. 1920. A "Crested Tit" also reported as seen near Croydon (Surrey), April 24, 1904.
233. **The British Blue Titmouse.**
 DISTRIBUTION.—Breeds in Alderney (see *Brit. B.*, XVII, p. 190).
245. **The British Willow-Titmouse.**
 DISTRIBUTION.—Breeding Leicestershire. Family party seen E. Ross-shire, June 1919.
248. **The Northern Long-tailed Titmouse**
 DISTRIBUTION.—Line 4, for "Uist" read Unst.
255. **The Fire-crested Wren.**
 DISTRIBUTION.—One seen Worcester, Nov. 1921.
262. **The Lesser Grey Shrike.**
 DISTRIBUTION.—One Norfolk, Sept. 1922, one (probable) seen Northumberland, April 1921.
266. **The Great Grey Shrike.**
 DISTRIBUTION.—Late dates, one June 13, 1920 (Surrey), one July 10, 1921 (Staffs.).
271. **The Woodchat Shrike.**
 DISTRIBUTION.—Male seen Pembroke, May 4, 1923, one Isle of May, Sept. 18, 1921.
277. **The Red-backed Shrike.**
 DISTRIBUTION.—One E. Ross., Sept. 1919, one Lerwick (Shetland), Aug. 1920.
281. **The Waxwing.**
 DISTRIBUTION.—Considerable immigration Nov. 1921, chiefly S.E. Scotland, N.E. England, last seen April 10, Cumberland, 50–60 Lewis (O. Hebrides), Nov.
291. **The Pied Flycatcher.**
 DISTRIBUTION.—Bred Worcester, 1921, Ross-shire, 1919. One reported Achill (Mayo), May 1920, and one Mayo, Nov. 1921.
296. **The Red-breasted Flycatcher.**
Female.—C. B. Ticehurst states (*Ibis*, 1922, p. 625) that three females he examined had more or less red on chin and throat in summer. I have found only one specimen labelled female with a little red in the large series in the *Brit. Mus.*, so this seems exceptional. The same author states that first summer males vary much in amount of red and have brown not grey ear-coverts. (H.F.W.)
297. **DISTRIBUTION.**—One Norfolk, Oct. 1919, two Northumberland, Sept. 1922, one Lincs., Oct. 1922, possible pair seen Devon, May–July 1921, one Sept., several Oct. 1920, Shetlands, one Isle of May, Sept. 1921, one Sept. 1922, one Mull of Galloway (Wigtownshire), Sept. 1922.
300. **The Chiffchaff.**
Wing-formula.—Exceptionally 2nd primary falls between 6th and 7th in length. (H.F.W.)
303. **The Siberian Chiffchaff.**
Wing-formula.—C. B. Ticehurst states (*Ibis*, 1922, p. 563) that the 2nd primary in about half of a large series equalled 8th, and in about half was between 7th and 8th. On re-examination of the very large series

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in Brit. Mus. I would revise proportions thus : 2nd usually equals 8th, often between 7th and 8th, sometimes between 8th and 9th, very rarely equals 7th. (H.F.W.)

DISTRIBUTION.—Two Lerwick (Shetland), Oct. 8, 1920.

311. **The Wood-Warbler.**

BREEDING-HABITS.—Average size of 100 eggs, 15.87×12.38 mm.

DISTRIBUTION.—One Lerwick (Shetland), May 1920.

313. **Eversmann's Warbler.**

DISTRIBUTION.—One (4th) near Blakeney, Norfolk, Sept. 4, 1922 (E. C. Arnold, Brit. B., xvi, p. 162), one, Fair Isle (Shetlands), Sept. 27, 1922 (Scot. Nat., 1923, p. 68).

316. **The Yellow-browed Warbler.**

DISTRIBUTION.—Lines., single birds Oct. 1919, Sept. 1921, Sept. 1922, Oct. 12 and 19, 1923, Holy Is. (Northumb.), single birds Sept. 29, 30, Oct. 7, 1922, one Lerwick (Shetland), Oct. 1920, one Isle of May, Sept. 1921, and several Sept. 24—Oct. 1, 1922, one seen Fifeshire, Oct. 1922.

321. Genus **Cettia** Bp.

Earliest date : *Cettia* Bonaparte, Iconogr. Faun. Ital., i, fasc. 9, text to pl. 29 (1834—Type *Sylvia cetti* Temm.).

332. **Grasshopper-Warbler.**

BREEDING-HABITS.—In south coast counties eggs often laid during first half May and regularly double brooded.

337. **The Great Reed-Warbler.**

DISTRIBUTION.—One picked up dead, Cosheen, Castle Townshend, Cork, May 16, 1920 (specimen now in Brit. Mus.) (J. E. Harting, Field, 12, vi, 1920, p. 870).

343. **The Marsh-Warbler.**

Nestling.—No down, skin dark flesh-colour. Mouth, inside pale mustard-yellow, two black tongue-spots, gape yellow (J. A. Walpole Bond, Brit. B., xvi, p. 185).

344. DISTRIBUTION.—Breeding Kennet valley (Berks.) 1920–23.

348. **The Sedge-Warbler.**

DISTRIBUTION.—One Lerwick (Shetland), May 16, 1919.

349. 147. **Acrocephalus paludicola** (Vieill.)—**The Aquatic Warbler.**

SYLVIA PALUDICOLA Vieillot, Nouv. Dict. d'Hist. Nat. Nouv. éd., xi, p. 202 (1817—Lorraine et Picardy)

instead of *Acrocephalus aquaticus* (Gmelin) the description of which cannot safely be referred to the Aquatic Warbler and seems to have been meant for the Whinchat !

351. Genus **Hippolais** Baldenstein.

HIPPOLAIS Baldenstein, Neue Alpina, ii, p. 77 (1827—Monotype *Hippolais italica* Baldenstein=*H. polyglotta*) instead of *Hypolais* Kaup, 1829.

353. **The Icterine Warbler.**

DISTRIBUTION.—One Norfolk, Sept. 1921, one Lines., Sept. 1922, one reported heard Norfolk, Aug. 20, 1921, and one believed seen Norfolk, May 28, 1922, one Noss Head (Caithness), May 3, 1921.

355. **The Melodious Warbler.**

DISTRIBUTION.—One reported seen and heard Budleigh Salterton (Devon), May 1921.

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357. Genus *Sylvia* Scopoli.

Though Gray quoted as the type *Sylvia melanocephala*, his designation cannot be accepted, because *melanocephala* was not contained in Scopoli's original list of the species of *Sylvia*. We must accept as the type *Sylvia curruca* (L.), as proposed in B.O.U. List Brit. B., 1915, p. 362.

361. The Barred Warbler.

DISTRIBUTION.—Lerwick one, Aug. 29, one Sept. 16, 1921, Isle of May one, Sept. 25, 1922.

364. The Garden-Warbler.

Synonym : *Sylvia simplex* Latham, Gen. Synops. Suppl., I, p. 287 (1787—Name for the English ally or "variety" of the "Pettychaps" which is the Orphean Warbler).

366. DISTRIBUTION.—Bred Ross-shire 1919; one Caithness, May 12, 1920, several Lerwick (Shetland), May, Aug., Sept., Oct., 1920.

368. The Blackcap.

Incubation.—Period in some cases only 10–11 days : further observations needed.

372. The Lesser Whitethroat.

Synonym : *Sylvia Sylviella* Latham, Gen. Syn. Suppl., p. 288, pl. cxiii (1787—Based on p. 185 where the Lesser Whitethroat is described from Bulstrode, Bucks. On pl. bird, nest and eggs).

374. DISTRIBUTION.—Bred Cornwall 1920 and Carnarvon 1922, breeds Isle of Man, bred Loch Fyne (Argyll.) 1921, stated to breed annually Dumfriesshire, occurred Caithness May 1920, Lerwick (Shetland) May and Oct. 1920, west Ross-shire June 16, 1920.

375. Add 156A *Sylvia curruca affinis* Blyth.—The Siberian Lesser White-throat.

SYLVIA AFFINIS Blyth, Journ. As. Soc. Bengal, XIV, p. 564 (1845—India).

Sylvia curruca affinis Blyth, W. E. Clarke and J. H. Stenhouse, Scott. Nat., 1921, p. 179.

DESCRIPTION.—Except for shorter 2nd primary in all plumages like *S. c. curruca* but juvenile slightly paler and more rufous-brown on upper-parts. Moults apparently same but in autumn sometimes moulting Sept.

Measurements and structure.—♂ wing 62–69 mm., tail 53–59, tarsus 18–21, bill from skull 11–13 (15 measured). ♀ wing 62–69. Primaries : 1st 2–6 mm. longer than primary-coverts, 3rd and 4th longest, 5th .5–1 shorter, 6th 2–4 shorter, 2nd usually between 6th and 7th, sometimes equal to 6th or 7th, occasionally (more often in ♀) between 7th and 8th.

DISTRIBUTION.—*Scotland*.—One (male) Fair Isle, Oct. 3, 1921 (*ut supra*) and one (male) Sept. 20, 1923 (J. H. Stenhouse, Scott. Nat., 1923, p. 173.)

DISTRIBUTION.—*Abroad*.—Nests in Siberia, north as far as wooded regions, east to Manchuria, south apparently to Tian-shan. Winters in India as far as Ceylon, passing through Turkestan, Afghanistan, Baluchistan, E. Persia.

378. The Sardinian Warbler.

Nestling.—No down. Mouth inside orange, no tongue-spots, externally flanges pale yellow. *Incubation*.—Period 13–14 days, fledging period 11 days (J. H. Stenhouse, Brit. B., xiv, p. 41).

382. The Dartford Warbler.

Synonym : *Ficedula ulicicola* Blyth, Rennie's Field. Nat., I, p. 310 (1833—England).

last line but one, for *Melzophilus* read *Melizophilus*.

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385. **DISTRIBUTION.**—Exterminated in main Surrey breeding-haunt by severe weather in 1917.
386. **The Rufous Warbler.**
Nestling.—No down, skin black. Mouth inside orange-yellow, no tongue-spots, externally flanges white (J. H. Stenhouse, Ibis, 1921, p. 584).
395. **The Fieldfare.**
DISTRIBUTION.—Early dates Wilts., Sept. 2, 1922, Cumberland Sept. 7, 1922.
400. **The British Song-Thrush.**
Turdus ericetorum Turton, Brit. Fauna, p. 35 (1807—solitary heaths in England, ex Lewin, Brit. B., II, pl. 53, text), which has been proposed as the correct name of the British Song-Thrush (see Mathews and Iredale, Brit. B., XVII, p. 47) cannot be adopted because the author expressly says that it is not the Song-Thrush, and since by description and figure it has a much shorter tail and a “black mark passing through the eye.” In fact the description suits better some of the smaller North American Thrushes.
403. **The Hebridean Song-Thrush.**
 Has occurred in Ayrshire on migration (Oct. 7, 1922). Song-Thrushes from Mull are intermediate in colour between *T. ph. clarkei* and *T. ph. hebridensis* (R. Meinertzhagen, Bull. B.O.C. XLIV, p. 37), as also are some from Coll. (H.F.W.).
406. **The Redwing.**
DISTRIBUTION.—Early date Aug. 4, 1922, Shropshire.
417. **The Alpine Ring-Ouzel.**
DISTRIBUTION.—One supposed in Norfolk, Sept. 18, 1894, is *T. t. torquatus* (B. B. Riviere in litt.).
434. **179. *Ænanthe deserti atrogularis* (Blyth).—The Eastern Desert-Wheatear.**
SAXICOLA ATROGULARIS Blyth, Journ. Asiatic Soc. Bengal, XVI, p. 131 (1847—Upper Provinces, Sind, etc.) instead of *Æ. d. albifrons* (Brandt) which is preoccupied by *Saxicola albifrons* Rüppell. See Mathews and Iredale, Austr. Av. Rec., I, p. 160 (1921), and C. B. Ticehurst, Ibis, 1922, p. 158.
441. **182. *Ænanthe leucomela leucomela* (Pallas)—The Pied Wheatear.**
MOTACILLA LEUCOMELA Pallas, Nov. Comm. Petr., XIV, p. 584, pl. 22, fig. 3 (“1770,” but not published until 1771—Lower Volga, Altai, Dauria, terra typica accepted Lower Volga) instead of *Æ. p. pleschanka* because Lepechin is not consistently binomial.
462. **The Redstart.**
DISTRIBUTION.—Bred Islay 1919 and probably 1920.
477. **The Lapland Bluethroat.**
DISTRIBUTION.—Male, Fair Isle (Shetlands), May 25, 1910 (J. H. Stenhouse, Scot. Nat., 1921, p. 76).
480. **The Continental Robin.**
DISTRIBUTION.—Specimen identified S. Uist (O. Hebrides), Oct. 27, 1920.
498. **205. *Cinclus cinclus gularis* (Latham).—The British Dipper.**
TURDUS GULARIS Latham, 2nd Suppl. Gen. Synops., p. xl. (1801—Penrith, Cumberland. Cf. Pennant, jun., Tour to Alston Moor, and last ed. of Pennant's Brit. Zool., ed. by Pennant, jun., I, p. 399, 1812) instead of *C. c. britannicus* Tschusi. See Mathews and Iredale, Austr. Av. Rec., V, pp. 63–4.

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16. **The Egyptian Nightjar.**
BREEDING-HABITS.—Average of 14 eggs, 31.37 × 22.17. Breeding-season April to July (Sladen).
37. **The Green Woodpecker.**
DISTRIBUTION.—*Scotland*.—Delete "but bred Loch Lomond 1912," an error caused by a transposition.
40. **The Northern Great Spotted Woodpecker.**
DISTRIBUTION.—Add Norfolk, Nov. 1881, Nov. 1889, Oct. 1915; Isle of Man, Feb. 1899.
42. **The British Great Spotted Woodpecker.**
DISTRIBUTION.—Bred Trossachs, 1921, Glenstriven, 1922, Abernethy Forest (Inverness), 1922, pair seen near Grantown (Elgin), June, 1922, bred Kincardine, 1922, bred Forfarshire, 1923, a good many seen Aberdeen, 1922, reported Banffshire, 1922, thus becoming established north to Spey Valley.
43. **The British Lesser Spotted Woodpecker.**
DESCRIPTION.—*Nesting*.—No down. Inside mouth and gape flanges flesh-colour, no tongue-spots.
Juvenile.—Crown is streaked or spotted with dusky-black and in female has very little crimson.
Structure.—In juveniles of this and other British Woodpeckers and Wryneck the two inner primaries are dwarfed (J. P. Chapin, Auk, 1921, pp. 531-52, 1922, p. 299; cf. Brit. Birds, xvi, pp. 45-6).
DISTRIBUTION.—"One or two pairs" reported "located" Arndilly (Banff.) 1923 (*Field*, 6, v. and 20, v. 1922), but this is very unlikely and requires confirmation (see Brit. Birds, xvii., p. 195).
54. **The Cuckoo.**
BREEDING-HABITS.—Sixty species recorded as fosterers, but as evidence for three of these is dubious and Pheasant, Red Grouse, Kestrel and Ring-Dove cannot be regarded as fosterers, correct number is probably 53. Twenty-five eggs recorded for one hen Cuckoo in a single season by E. Chance. Several cases recorded of two eggs by one hen in same nest, usually at end of season.
55. **MIGRATIONS.**—Early dates : Mar. 19, 1923, Devon, Mar. 24, 1923, Hants., Mar. 29, 1922, Yorks., Mar. 31, 1920, Leicester. One seen Dec. 3, 1921, Wilts.
61. **The American Yellow-billed Cuckoo.**
DISTRIBUTION.—One Scilly Is. third week Nov. 1921.
63. **Order STRIGES.**—Add "4th toe reversible." (E.H.)
66. **The Snowy Owl.**
DISTRIBUTION.—One seen Northumberland and one Norfolk, May, 1922.
74. **234. *Athene noctua vidalii* A. E. Brehm.—The Little Owl.**
ATHENE VIDALII A. E. Brehm, Allg. D. Naturh. Zeitung 1857, p. 440 ("In the whole of Spain in rocky sides of the mountains. Resident"). instead of *Athene noctua mira* Witherby as with a better series of Spanish skins now available it is clear that the difference in colour, and width of streaks on the head are not sufficiently constant to warrant the separation of the two forms, and therefore *vidalii* being by far the older name must be adopted for the Dutch and British bird. (H.F.W.)
76. **DISTRIBUTION.**—Bred Cheshire 1921, S.E. Yorks. 1922, probably Cornwall 1923, Glamorgan 1919, and "thoroughly established" 1923, Merioneth 1922. Occurred Lancs. Feb. 1920, April 1921, Northumberland May 1919, Roxburghshire April 1921.

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84. **The Short eared Owl.**

Synonym : *Otus Microcephalus* Forster, Syn. Cat. Brit. B., pp. 3, 46 (1817—New name for "*Brachyopus*" of Linné, who, however, never used this name, but Forster meant *brachyotos* used by Gmelin 1788, ex Forster 1771, and based on Bewick, Hist. Brit. B., p. 86).

87. **DISTRIBUTION.**—Breeds, probably most years, Norfolk.

91. **The British Tawny Owl.**

Footnote.—Wings, males, for "continental 265–200," read 265–290.

111. **The Peregrine Falcon.**

DISTRIBUTION.—Bred inland cliff Somerset, 1921.

119. **The Merlin.**

DISTRIBUTION.—Breeds annually Exmoor (Devon and Somerset).

134. **The Golden Eagle.**

DISTRIBUTION.—Nested S.W. Scotland 1921 (H. S. Gladstone, Notes on Birds of Dumfriesshire, p. 72), also regularly prior to this date. (F.C.R.J.)

141. **The Rough-legged Buzzard.**

DISTRIBUTION.—3rd record for O. Hebrides, Vallay, May, 1919.

141. **The Common Buzzard.**

Synonym : *Buteo Spiralis* Forster, Syn. Cat. Brit. B., p. 44 (1817—New name for "Common Buzzard." Bewick, Hist. Brit. B., Fig. p. 57).

146. **The Marsh-Harrier.**

Synonym : *Circus Palustris* Forster, Syn. Cat. Brit. B., pp. 1, 44 (1817—New name for *Falco aeruginosus* and the "Moor Buzzard" of Bewick, Hist. Brit. B., p. 61).

150. **Montagu's Harrier.**

Synonyms : *Falco cineraceus* Montagu, Orn. Dict. under F., fol. K2 (1802—Wiltshire). *Falco cinerareus* Montagu, Trans. Linn. Soc. London, IX, p. 188 (1808—Evidently slip for *cineraceus*). *Circus montagui* Vieillot, Nouv. Dict. d'Hist. Nat. (Nouv. Ed.), xxxi, p. 411 (1819—New name for Montagu's *Falco cineraceus*).

154. **The Hen-Harrier.**

Synonym : *Circus Aegithus* Forster, Syn. Cat. Brit. B., pp. 2, 45 (1817—New name for *C. cyaneus*, ex Leach, and as figured by Bewick, Hist. Brit. B., pp. 72, 74).

157. **DISTRIBUTION.**—Attempted to nest Perthshire 1922.

160. **The Goshawk.**

DISTRIBUTION.—One recorded seen Tearaght Rock (Kerry), Oct. 1922, subspecies unknown.

172. **The White-tailed Eagle.**

Synonym : *Pygargus Vulturinus* Forster, Syn. Cat. Brit. B., p. 44 (1817—New name for Linné's "*Vultur Albicilla*," which name was used in 1766, while in 1758 it was "*Falco Albicilla*." "I saw this bird in North Wales and have many examples of its being shot in Scotland. Fig. Bewick, p. 51").

184. **The Griffon Vulture.**

DISTRIBUTION.—*Abroad.*—Breeding colonies in valley of Tarn, S. France (see Rev. Française d'Orn, 1921, pp. 21, 35 *et seq.*).

208. **The Buff-backed Heron.**

Nestling.—Exactly like that of *Egretta a. alba*. (H.F.W.)

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222. **The American Bittern.**

DISTRIBUTION.—Two near Armagh, Oct. 1921.

229. **The Whooper Swan.**

DISTRIBUTION.—Pair bred western Highlands, May 1921, and probably previously (A. Gordon, Brit. B., xv, p. 170). Reported to have bred Northumberland in 1923, but no young reared (Vasculum, x, p. 31, Oct. 1923).

231. **The Mute Swan.**

Synonym : *Cygnus immutabilis* Yarrell, Proc. Zool. Soc., London 1838, p. 19 (Description of specimen shot on the Medway, with paler feet, and to which are attributed the white pulli which occur sometimes in semi-domesticated Swans).

232. **DISTRIBUTION.**—For some evidence of its having been indigenous in England see N. F. Ticehurst, Brit. B., xvii, pp. 174–82.

233. **The Grey Lag-Goose.**

Synonym : *Anser palustris* Fleming, Hist. Brit. Anim., p. 126 (1828—"Breeding in the fen countries of England").

241. **The Lesser White-fronted Goose.**

Incubation.—Period (in confinement) 25 days (Blaauw).

242. **The Bean-Goose.**

Synonym : *Anser paludosus* Strickland, Rep. Brit. Ass. Adv. Sc., 1853 pp. 131, 132, Ann. and Mag. Nat. Hist., 1859, pp. 122–24, pl. iv, Fig. 1 (England).

245. **The Pink-footed Goose.**

Synonym : *Anser phœnicopus* Bartlett, Proc. Zool. Soc. London, Part vii, p. 3 (1839—England).

DESCRIPTION.—*Nestling*.—Like nestling *A. f. fabalis* but upper- and under-parts strongly suffused greenish-yellow ; crown, centre of nape, sides of body and back of thighs dark sepia, down filaments greenish-yellow ; spot below and bar across wing, and region below eye greenish-yellow ; under-parts whitish suffused greenish-yellow. (One examined.) (A. C. Meinertzhagen).

247. **DISTRIBUTION.**—Flock of forty seen N. Uist (O. Hebrides), May 1921. *Abroad*.—No evidence of occurrence on Franz Josef Land but breeds Greenland.

249. **The Snow-Goose.**

DISTRIBUTION.—Three seen Solway, Oct. 1922, and one reported seen Norfolk, Oct. and Dec. 1922.

254. **The Barnacle-Goose**

BREEDING-HABITS.—Found nesting in 1921–22 in Spitsbergen (F.C.R.J.). Nest freely lined down : clutch sometimes 6.

296. **The Wigeon.**

DISTRIBUTION.—Breeds also Wigtownshire and Dumbartonshire.

298. **The American Wigeon.**

DISTRIBUTION.—Sir Richard Graham had at Netherby in 1914 twenty full-winged hybrid Wigeon and American Wigeon which disappeared during the war, and this may account for an American Wigeon shot in Dumfriesshire in Nov. 1918 (H. S. Gladstone, Notes on the Birds of Dumfriesshire, 1923).

303. **The Pintail.**

DISTRIBUTION.—*Abroad*.—Winter quarters in America refer to *A. a. tzitzihua*, the American subspecies.

303. **The Shoveler.**

Synonym : *Anas Rufigaster* Latham, Suppl. Gen. Synops. B., I, p. 297 (1787)—Ex "Red-breasted Shoveler," Gen. Synops. B., III, 2, p. 512 (1785—Lincolnshire).

309. **DISTRIBUTION.**—Breeds Cheshire, Leicester., Hunts., Bucks., Berks., Glamorgan ; has bred Argyll., bred Islay 1918.362. **The Common Eider.**

DISTRIBUTION.—Breeding some numbers Wigtown 1920 and 1921.

368. Genus **Oidemia** Fleming.

In No. V of the *Isis*, 1822, p. 564, was published a name by Boie, *Melanitta*, for the three black Ducks, *nigra*, *fusca*, *perspicillata*. The numbers of the *Isis* were published monthly, No. 5 therefore in May ; according to Mathews and Iredale (*Austral Avian Record*, v, p. 66) there is "internal evidence" that the *Isis* at that time was "published promptly." Fleming's *Philosophy of Zool.* in which the name *Oidemia* appeared is dated 1822. Messrs. Mathews and Iredale say "we can now state that Fleming's book was not published until June." They do not say how they acquired this knowledge. The numbers of the *Isis* cannot have been published early in the month, as in the May number a letter dated May, and in the June number a letter dated June was published. The name *Melanitta* has been adopted by the B.O.U. List Committee, but as absolute proof of the date is not at present forthcoming we propose to retain *Oidemia*.

372. **The Common Scoter.**

DISTRIBUTION.—Records of breeding in Tiree in 1889 and 1897 not doubted (E. V. Baxter and L. J. Rintoul, *Scot. Breeding Ducks*, p. 64), 17 pairs breeding one locality, Ireland 1918, considered mistake, 7 pairs breeding up to 1921.

384. **The Goosander.**

DISTRIBUTION.—Also breeds S.W. Perth and Aberdeen.

400. 330. **Phalacrocorax aristotelis aristotelis** (L.)—The Shag.

PELECANUS ARISTOTELIS Linn., *Faun. Svec.*, *Faunula*, p. 5, No. 146, ex p. 51 (1761—Sweden) instead of *Ph. g. graculus* L. 1766. See Laubmann, *Verh. Orn. Ges. Bayern*, xv, p. 220 (Sept. 1922), and Mathews and Iredale, *Austr. Av. Rec.*, v, p. 48 (Feb. 1923).

408. **The Gannet.**

DISTRIBUTION.—Pair attempted to breed Lundy, and another pair Isle of May (Forth) in 1922.

425. **The Western Mediterranean Shearwater.**

DISTRIBUTION.—One Northumberland, Sept. 1921.

442. **Bulwer's Petrel.**

DISTRIBUTION.—One found dead near Scarborough (Yorks.) Feb. 28, 1908 (W. E. Collinge, *Nat.*, 1922, p. 128).

445. **The Fulmar Petrel.**

DISTRIBUTION.—Breeding Bempton Cliffs (Yorks.) 1922 and greatly increased 1923, seen cliffs Whitby 1922 and 1923, probably breeding but no actual proof. Breeding Rathlin Is. (Antrim) 1921 and 1922. Two pairs at Isle of May (Forth) 1922 thought to be breeding.

476. **The Red-throated Diver.**

DISTRIBUTION.—Bred Islay 1922

488. **The Turtle-Dove.**

DISTRIBUTION.—Several seen May to July 1922 Wigtownshire, but no nest found.

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494. line 1 (LIMICOLÆ) for "holorhinal" read *schizorhinal*.498. 367. *Cursorius cursor cursor* (Latham).—The Cream-coloured Courser.

CHARADRIUS CURSOR Latham, Gen. Synops. Birds, Suppl. 1., p. 293 (1787)—Name given to the "cream coloured Plover," from Kent, described Gen. Synops., v, p. 217 and figured Suppl. Pl. cxvi) instead of *C. g. gallicus* (Gm.) which it antedates. See Mathews and Iredale, Austr. Av. Rec., v, p. 63.

530. The Killdeer Plover.

DISTRIBUTION.—Should be eight or nine not six.

530. 378. *Charadrius apricarius apricarius* L.—The Southern Golden Plover.

instead of *Ch. apricarius oreophilus* Meinertzhagen because it is now known that the form breeding on Oeland is the same as the British bird, and Linnæus gave only Oeland and America as localities in Syst. Nat. ed., x, p. 150, the former having been selected as the restricted typical locality by Hartert, Vög. p. F., Vol. 11, p. 1549.

534. 379. *Charadrius apricarius altifrons* Brehm.—The Northern Golden Plover.

CHARADRIUS ALTIFRONS Brehm, Handb. Naturg. Vög. Deutschl., p. 542 (1831—Færoes, type in Tring Mus.) instead of *Charadrius a. apricarius* L.

560. The Ruff.

DISTRIBUTION.—Nested Norfolk, 1922.

568. 390. *Calidris alpina schinzii* (Brehm).—The Southern Dunlin.

PELIDNA SCHINZII Brehm, Beitr. z. Vögelkunde, III, p. 355 (1822—Küsten der Ostsee, Rügen), this being the form breeding in British Isles.

DESCRIPTION.—*Adult male and female.* Winter.—As described under *C. a. alpina* (pp. 568–9). Summer.—Crown black-brown, feathers edged at sides tawny; nape dusky suffused pale tawny streaked dusky-brown; mantle, scapulars and new feathers of back and upper tail-coverts black-brown, marked and edged tawny; eye-stripe white, spotted dusky; ear-coverts greyish-buff; cheeks and sides of neck white (sometimes suffused buff) streaked black-brown; chin white; throat and breast white heavily streaked black-brown, and often suffused buff; flanks white sometimes marked sepia; black patches on belly usually more or less intermixed with white and feathers tipped white (amount of black varies individually); vent white, sometimes some blackish spots; under tail-coverts white, sometimes some spotted dusky; new tail-feathers black-brown narrowly edged and sometimes marked tawny; wing as winter, but new innermost secondaries and coverts as scapulars. (A.C.M.)

DISTRIBUTION.—Breeds in British Isles (see p. 572) and on coasts of North Sea and Baltic (Island of Rügen, Pomerania), Denmark, Holland, southern Sweden.

390A. *Calidris alpina alpina* (L.)—The Lapland Dunlin.

DESCRIPTION.—*Adult male and female.* Winter.—Coloration indistinguishable from *C. a. schinzii* and moults same. Summer.—Like *C. a. schinzii* but feathers of crown, mantle and scapulars with rich rufous-chestnut edges; nape greyish-white streaked black-brown and in sharp contrast with crown and mantle; throat and upper-breast white narrowly streaked black-brown and never suffused buff as in many *C. a. schinzii*; patch on belly usually blacker and more pronounced.

Nesling.—Not examined.*Juvenile.*—Apparently not distinguishable.

Measurements.—♂ wing 110–115 mm., bill 29–30 (3 measured). ♀ wing 116–118, bill 32–34 (4 measured). (A.C.M)

DISTRIBUTION.—*British Isles*.—Winter-visitor and passage-migrant.

DISTRIBUTION.—*Abroad*.—Breeds Iceland, Lapland, N. Russia, Spitsbergen and perhaps W. Siberia. On migration all over Europe to N. Africa and Canaries, in N.E. Africa to Abyssinia and Somaliland, casually E. Africa. Replaced in Greenland by *C. a. arctica*, on shores of Baltic and North Sea by *C. a. schinzii*, in N.E. Siberia and Arctic America by *C. a. sakhalina*, and in W. Siberia by the somewhat doubtful *C. a. pusilla*.

572. 391. *Calidris testacea* (Pall.)—The Curlew-Sandpiper.

SCOLOPAX TESTACEA Pallas, Vroeg's Cat. Verzam. Vogelen, etc., Adumbratiuncula, p. 6 (1764—Holland)
instead of *Calidris ferruginea* (Brünnich) which is preoccupied by the same name used by Pontoppidan for a bird, the description of which is considered indeterminate by the majority of the B.O.U. List Committee (Hartert however disagreeing).

584. The American Pectoral Sandpiper.

DISTRIBUTION.—Argyll. should be Dumbarton.

590. The Purple Sandpiper.

Synonym : *Totanus Niger* Forster, Syn. Cat. Brit. B., p. 24 (1817—New name for *Tringa lincolniensis*!).

600. Genus *Limnodromus* Wied.

LIMNODROMUS Wied, Beitr. Naturg. Brasil., iv, 2, p. 716 (1833—Monotype *L. noveboracensis*=*griseus*)
instead of *Macrorhamphus* Forster, because Fischer quoted 1813 a "*Macrorhamphus* Lacepède." This name is a nomen nudum and was not used by Lacepède who called his genus "*Macrorhamphosus*." Nevertheless the majority of the B.O.U. List Committee decided that Fischer's erroneous quotation anticipated the name *Macrorhamphus*, so that *Limnodromus* would have to be used (Hartert disagreeing).

644. The Red-necked Phalarope.

DISTRIBUTION.—Pair seen June 1916, island off W. coast Ireland, one seen Tearaght Rock (Kerry) Oct. 1922.

678. The Færoe Snipe.

DISTRIBUTION.—One Fair Is. (Shetland), Sept. 29, 1923.

698 The Caspian Tern.

Should be numbered 437, not 537.

704. The Sandwich Tern.

DISTRIBUTION.—Bred Dorset 1923. Farne Is. temporarily deserted 1922, returned 1923. Large increase Norfolk 1923.

712. 441. *Sterna macrura* Naum.—The Arctic Tern.

STERNA MACRURA Naumann, Isis, 1819, p. 1847 (Island Nordstrand and coast of West Schleswig)
instead of *S. paradisæa* Brünnich, 1764, which is preoccupied by the same name used in 1763 by Pontoppidan for a bird, the description of which is considered indeterminate by the majority of the B.O.U. List Committee (Hartert disagreeing).

757. The Scandinavian Lesser Black-backed Gull.

DISTRIBUTION.—Seen several occasions May 1923, passing Isle of May (Forth).

761. The British Lesser Black-backed Gull.

DISTRIBUTION.—A few breed Yorks.

765. The Great Black-backed Gull.

DISTRIBUTION.—Bred Steep Holm (Somerset) 1923.

SYSTEMATIC LIST OF BRITISH BIRDS

In the following list the names are corrected and brought up to date in accordance with the notes published on pages 887-902 of Volume II.

The status given to each bird is in the briefest form possible, and for fuller details the British Distribution in the body of the work and the corrections and additions thereto on pages 887-902 of Volume II must be consulted.

Page numbers of the "Additions and Corrections" are quoted only in those cases where the name or general status is affected.

There are 493 numbered birds to which must be added numbers 13A, 156A and 390A, making a total fully admitted to the British List of 496 forms representing 418 species.

These may be broadly classified as follows :

Birds RESIDENT as species but not necessarily as individuals and breeding regularly in some part of the British Islands	140	140
SUMMER-VISITORS which breed regularly	50	50
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843

- 483.
- Gallinula chloropus chloropus*
- (L.)

The Moor-Hen.

Resident, breeds : some migration

843

Genus **FULICA** Linnæus

846

- 484.
- Fulica atra atra*
- L.

The Coot.

Resident, breeds : some migration

847

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850

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850

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850

- 485.
- Tetrao urogallus urogallus*
- L.

The Capercaillie.

Became extinct about 1760, re-introduced 1837 : now resident, breeds, Scotland

850

Genus **LYRURUS** Swainson

855

- 486.
- Lyrurus tetrix britannicus*
- With. & Lönn.

The British Black Grouse.

Resident, breeds, Scotland, Wales, n. and s.w. England

855

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859

- 487.
- Lagopus scoticus scoticus*
- (Lath.)

The British Red Grouse.

Resident, breeds, G. Britain (not Shetlands, O. Hebrides and introduced s. England)

859

- 488.
- Lagopus scoticus hibernicus*
- (Kleinsch.)

The Irish Red Grouse.

Resident, breeds, Ireland, O. Hebrides

863

- 489.
- Lagopus mutus millaisi*
- Hart.

The Scottish Ptarmigan.

Resident, breeds, Highlands Scotland, some Hebrides

864

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869

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869

- 490.
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- L.

The Pheasant.

Introduced : resident, breeds (not Shetlands, Orkneys)

869

Genus **PERDIX** Linnæus

874

- 491.
- Perdix perdix perdix*
- (L.)

The Common Partridge.

Resident, breeds (not Shetlands, Orkneys, O. Hebrides)

875

Genus **COTURNIX** Bonnaterre

879

- 492.
- Coturnix coturnix coturnix*
- (L.)

The Quail.

Summer-visitor, breeds, rare n. G. Britain and now rare s.e. England

879

Genus **ALECTORIS** Kaup

882

- 493.
- Alectoris rufa rufa*
- (L.)

The Red-legged Partridge.

Introduced : now resident, breeds locally England, Wales : some evidence occasional migration

882

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